Vision for the Future

2021 Town Plan

Woodbury, VT

Draft September 16, 2021

Highlighted areas: to be finalized following PC Hearing process

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Prepared by the Woodbury Planning Commission

With Assistance from the Central Vermont Regional Planning Commission

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Vision for the Future

Woodbury's rural landscape, supporting many diverse natural habitats unique to Vermont, is one of its greatest assets. This provides for working landscapes, outdoor recreation, scenic areas and much more. At the same time, our rural setting presents challenges and opportunities for our town and our connections to the world at large. Those who have chosen to stay or settle in Woodbury have a strong sense of place and community. Together, we have worked to make Woodbury an affordable, safe, and welcoming place to live. Woodbury will continue to strengthen our community and protect our rural setting as we meet challenges, present and future, and develop the opportunities those challenges have given us.

This vision for the future has helped guide the development of the 2021 Woodbury Town Plan. Planning for Woodbury's environmental health, economic development, housing needs, and infrastructure are fundamental responsibilities of the town. This new town plan is intended to serve as a long term guide and basis for local decision making in meeting these responsibilities.

During the course of developing this plan the Woodbury Planning Commission sought public input at various stages during the process including the development of two surveys, Front Porch Forum posts, a virtual Community Values Mapping Workshop, a series community input meetings and invitations to join regular and special planning commission meetings. To the degree possible attempts to reflect the desires and wishes of local residents and property owners have been integrated into the plan. While the Woodbury Planning Commission is the lead entity responsible for implementing the plan its success ultimately depends on the combined support, involvement and collaboration of Town residents, private property owners, and local officials.

The 2021 Woodbury Town Plan outlines a proposed course of action for protecting forestlands; preserving the quality of the lakes and ponds; attracting and retaining residents and businesses; and maintaining infrastructure. To that end the town plan proposes the following goals and priority actions:

Goals

- Protect and conserve Woodbury's forests, lakes, ponds, and wetlands to maintain and improve ecological functions.
- Strengthen and promote the long-term viability of working lands that are committed to sound management practices and contribute to the local economy.
- Protect and maintain significant scenic areas and views.

- Increase recreational opportunities afforded by Woodbury's natural setting for residents and non-residents.
- Protect and preserve important historic and cultural resources and make information about these resources available.
- Increase the diversity of housing options to meet the needs of a wide range of income levels and preferences.
- Support the viability of local businesses, and increase access to employment, training and educational opportunities in Woodbury by encouraging provision of services.
- Increase the vitality of our village centers, South Woodbury and Woodbury Village, to benefit the existing community and attract new residents.
- Maintain Woodbury's roads to a high standard for safety, efficiency and environmental integrity and ensure bicyclists and pedestrians are accommodated, particularly in the Village Centers and the Route 14 corridor.
- Maintain town-owned facilities and provide for basic public services, which are cost-effective, hazard resilient, and efficient while seeking opportunities to make improvements.
- Increase cell and broadband coverage for social, economic, educational and emergency service needs.
- Increase energy efficiency and energy conservation while supporting the transition to renewable energy sources.

Priority Actions

- Raise awareness and educate property owners and residents about the ecological important of forest blocks and about the State's Shoreline Protection Act
- Form committees to:
    - Undertake a feasibility study for the establishment of a town beach;
    - Recommend how to expand the local trail systems for all users;
    - Facilitate efforts for the creation of public gathering places and the possible establishment of a store or café.
- Apply for Village Center Designation to make financial and technical assistance resources available to commercial and public buildings in Woodbury Center Village including the school and town hall;
- Continue support of, and maintain a town representative on the regional Consolidated Union District, CV Fiber, or other contractors in the deployment of high-speed broadband connectivity.
- Seek grant funds to implement recommendations of the Woodbury Village Planning Study, specifically to identify water and wastewater options for Woodbury Center Village and to install streetscape recommendations for traffic calming and for bicycle and pedestrian facilities.

About Woodbury & About the Plan

About Woodbury

Located in the Northeast corner of Washington County in Northeastern Vermont, Woodbury is home to approximately 928 year-round residents (Census 2020). It isbounded by the Towns of Calais, Elmore, Hardwick and Cabot, and contains approximately 25,122 acres of land. It is known as the "Land of Lakes and Ponds," natural features which attracted some of the town's earliest inhabitants and remain a draw for many current residents and second home owners alike. The town's prosperity grew during the late 1890's with the granite boom. Woodbury gray has been used in the construction on many prominent buildings across the US. Today the historic buildings of South Woodbury Village and Woodbury Center Village are a reminder of a bygone time. The town is characterized by its forested hills and mountains dotted with many lakes and wetlands.

The natural environment and small-town feel are important aspects to Woodbury residents. People most value Woodbury's clean air and water; lakes and ponds; nice people, and its small town character. When surveyed in late 2019/early 2020 respondents indicated they chose to live in Woodbury for similar reasons, primarily citing the welcoming community, natural landscape, affordability compared to surrounding areas, and proximity to family.

Woodbury Loves	**Woodbury Wishes**
Affordability	Preservation of scenic landscapes
Scenic Beauty	Environmental protection of lakes and ponds
Recreation opportunities	A store, coffee shop, restaurant
Sense of community	Agricultural and land-based businesses
Rural and quiet	Home based businesses
Lake life	High Speed internet
Family	Public beach and outdoor recreation
	Community gathering places
	Services for seniors & Child Care Services
	Local businesses providing services and amenities
	Small scale commercial growth in Woodbury and South Woodbury Villages
	Ordinance enforcement
	Local law enforcement and emergency services
	Road maintenance

About the Plan

This plan replaces the 2003 Woodbury Town Plan and takes into account the changes that have happened since the last plan. It establishes a vision along with a series of goals, objectives and actions for the eight-year life of the plan and is intended to be user-friendly and easily understandable. The Woodbury Planning Commission utilized the Vermont Planning Manual as guide and strived to reflect local conditions and desires while also meeting the State planning goals and municipal plan requirements as identified in Title 24 of the Vermont Statutes Annotated, Chapter 117 (The Vermont Municipal and Regional Planning Act).

Developing a picture for the future and setting clear goals helps communities and individuals connect many smaller actions and measure achievement toward the larger goal. A guiding plan allows decisions to be made by considering the future of the community as a whole. Without it, short-term, shortsighted decisions can erode a community's quality of life, reduce its property values, and lead to higher taxes or wasteful spending.

The town plan is to be used as a:

- ☑ long-term guide: to measure and evaluate public and private initiatives that affect the future physical, social, and economic health of the community.
- ☑ basis for decision-making, community programs, and taxpayer investments to: identify priorities for funding; establish a capital improvement program; and direct other public and private local initiatives, such as farmland protection, housing development, or recreational facilities creation or improvement.
- ☑ action plan that identifies implementation steps and details the programs and projects over the short term and long term to achieve goals and objectives. Well-articulated implementation strategies can help leverage grant funding and other support for those actions.
- ☑ basis for municipal regulations: serves as the foundation for zoning and subdivision regulations and bylaws to protect shorelands and flood-hazard areas from development.
- ☑ source of information: valuable source of facts and figures on things like population changes, economic trends, and future housing and infrastructure needs; it also locates and describes important historic and natural resources.
- ☑ source for strategic planning and studies: Few plans can address every issue in sufficient detail. Therefore, municipal plans often recommend further studies to develop policies or strategies to meet specific needs like creating more housing or managing stormwater.

- ☑ tool for coordination: Municipal plans are important in conveying a community's vision for broader initiatives such as the development of inter-municipal, regional, and state agency plans and programs.
- ☑ source for community standards in state regulatory proceedings: Act 250, Vermont's statewide land use law; the Section 248 permitting process for energy projects; and other state regulatory processes that reference municipal plans.

In addition to the contents of this document the Woodbury Enhanced Energy Plan is included as an attachment and is to be considered as part of this town plan. There are a number of additional documents incorporated by reference which can be found on the Woodbury municipal website. They include:

- Woodbury Town Plan 2021 Data & Map Appendix, draft September 16, 2021: https://www.woodburyvt.org/wp-content/uploads/2021/09/09162021-draft-2021-Woodbury-Town-Plan-Map_Data_Appendix.pdf
- Woodbury Community Values Mapping Report, prepared by VT Fish & Wildlife Department, March 24, 2021:
- https://www.woodburyvt.org/wp-content/uploads/2021/03/Woodbury-Community-Values-Mapping-Report.pdf
- Woodbury Local Hazard Mitigation Plan, prepared by the Town of Woodbury, adopted February 4, 2019: https://www.woodburyvt.org/wp-content/uploads/2019/02/Woodbury-VT-LHMP.pdf
- Town Forest Recreation Plan, prepared by SE Group and Arrowwood Environmental, October 15, 2018: https://www.woodburyvt.org/wp-content/uploads/2019/02/Woodbury-Plan-Document_Final.pdf
- Woodbury Community Planning Project – Planning for the Future of Woodbury Village, prepared by LandWorks, December 2015 https://www.woodburyvt.org/wp-content/uploads/2019/09/Village-Plan-Final-Report.pdf

Gathering Public Input

During the course of developing this plan Vermont was operating under a State of Emergency Order due to the global COVID-19 pandemic. From mid-March 2019 through mid-June 2021 the planning commission was enabled to hold public meetings virtually via Zoom online conferencing software; meetings in person and public gatherings were discouraged. During the summer and early fall 2021 in person meetings resumed with some public safety precautions still in place. A Municipal Planning Grant awarded from the Department of Housing and Community Development helped fund a portion of the engagement efforts. The following techniques and strategies were used to engage residents in the process and gather input and feedback on the plan:

We love access to the many lakes, we like living deeper in nature, and in a place where we can afford to have a home plus lots of land. We wanted to raise our children in a small community with accountability to others and a deep sense of belonging.

- Woodbury resident

Electronic and paper announcements and updates: A press release was distributed to local media outlets to announce the project; announcements inviting participation in the survey, feedback on the Vision statement and planning commission agendas were posted on Front Porch Forum (FPF), on the municipal website, and at three public physical locations throughout town.

Planning Commission meeting minutes were posted on the municipal website and at the same physical locations. Email distribution lists maintained by the town and by local lake associations were also utilized to communicate announcements, updates and information.

Surveys: A survey was developed and distributed to property owners and residents to gather feedback on local values and concerns. The Planning Commission received 215 responses. Respondents most valued Woodbury's (1) Clean Air and Water, (2) Lakes and Ponds, (3) Nice People, and (4) Small Town Character. Respondents chose to live in Woodbury forsimilar reasons, primarily citing the welcoming community, natural landscape, affordability compared to surrounding areas, and proximity to family. One-on- one interviews were also conducted to supplement input gathered from the surveys. Additionally, a second-homers survey was distributed to gather targeted feedback from part-time residents to gauge additional preferences, and potentialchanges in residency due to the effects of COVID-19. This survey garnered 48 responses and highlighted additional desired services and local amenities. While the majority of respondents indicated they do not intend to move to Woodbury fulltime, this should be balanced with local knowledge which indicates the contrary. Results have to be integrated into the plan and can also be viewed on the municipal website.

Residents providing input at a meeting help at the Town Hall on August 28, 2021

Values Mapping Workshop and Community Conversations: In early winter 2021

the Woodbury Planning Commission invited the VT Community Wildlife Program (Department of Fish & Wildlife) to lead a Community Values Mapping event for the Town. In the mapping event, people were asked to identify places in Woodbury they love and what they value about those places. The input gathered helped reinforce feedback from the surveys. The results have been integrated into the plan and helped shape the creation of a forest district in the future land use plan. The Report generated from the Community Wildlife Program can be found on the municipal website. The Planning Commission also hosted three community conversation events to share information about the plan and gather feedback on the goals and alternative future land schemes. One meeting was held in person and two held virtually via Zoom. To supplement these events an online platform was developed for people to learn about the plan and provide input on the goals and future land use schemes.

Regular Public Meetings and Statutory Public Hearing: The Planning Commission met regularly to develop, discuss and review all aspects of the plan and adhered to the Open Meeting Law requirements and statutory municipal plan adoption procedures. Meeting agendas and minutes were posted in required timeframes and locations; public notice and hearing requirements were followed and documented. [following 1st public hearing - Insert anything specifically notable/controversial and response.] Comments, input, and feedback were considered and documented in Planning Commission minutes.

Compatibility with neighboring towns and the region

According to Vermont Statute, a municipal plan is considered to be "compatible" with the plans of its neighboring towns and the region if it "will not significantly reduce the desired effect" of the same. By virtue of its geography and planning goals, Woodbury's potential for inter-municipal land use conflicts is limited. This Plan vision and current development patterns, do not appear to threaten or obstruct the planning goals of Hardwick, Cabot, Calais or Elmore or those of the Central Vermont Regional Plan. Each of these plans strive to maintain forest areas and rural character in this area.

Draft copies of this Plan have been sent to all neighboring towns, the Central Vermont Regional Planning Commission and the Department of Housing and Community Development as per statutory requirements for review and comment. [Insert nature of any comments and how they were addressed-following Hearing and before transmittal to SB]. Woodbury therefore concludes that this Plan is compatible with those of adjoining communities and with the relevant regional plans.

Natural Setting

Natural Features & Ecological Systems

Woodbury is approximately 86% forested, with only about 1.5% of its land area developed. Five percent of Woodbury's land area is cropland, pasture, or open land, and another 2% is formerly open land in the process of reverting to forest. Woodbury contains more lakes and ponds than any other town in Vermont. Surface waters and wetlands comprise over 5% percent of the Town's total area. With about 1,560 feet of topographic relief inside its boundaries, the minimum elevation of just about 920 feet runs along the shores of Woodbury Lake, the terrain then climbs to over 2,483 feet on Woodbury Mountain in the northwest corner of Town.

Topography As elevation increases soils are thinner, erosion more extensive, vegetative cover more sparse, and climatic conditions more severe especially above 2,000 feet. Generally, in town slopes are steep; in fact, 4,395 acres (17.5%) of Woodbury's terrain exhibits slopes greater than 25%, with greatest concentrations being found in the Woodbury Range. Steep slopes are often associated with other environmental features such as rock outcrops, shallow soils, bedrock fractures, and groundwater seeps. If disturbed, these areas of high elevation and steep slopes can become unstable and are not suitable for development.

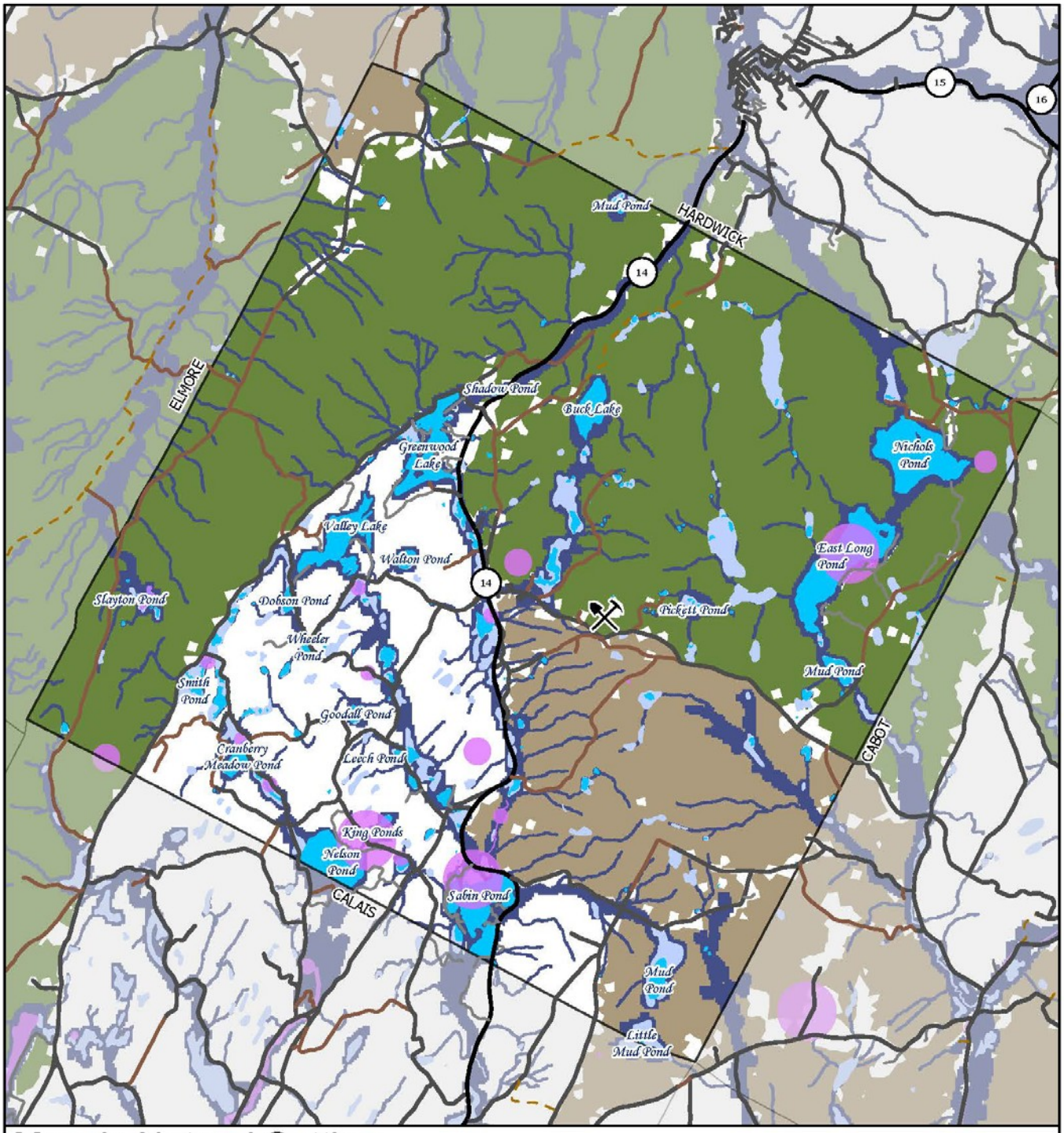
Soils USDA Natural Resources Conservation Service (NRCS) soil survey interprets soil types and evaluates their capability for certain uses. In general, unfavorable soil types for development typically contain excessive slopes, shallow depth to bedrock or hardpan, wet soils, excessively drained soils, unstable soils, and erodible soils. The majority of soils identified in the survey of Woodbury by the NRCS, however, have severe or moderate limitations for septic field absorption due to depth, wetness, rock, slope, slow percolation, flooding, and/or poor filtering.

Watershed The Town is roughly bisected by Route 14 which traverses a north-south valley formed by Cooper Brook to the north, and Kingsbury Branch to the south. Land in the northern and far western portion of town drains into the Lamoille River watershed and the rest of town drains southward into the larger Winooski River watershed. Both watersheds empty into Lake Champlain and for over two decades betterment of water quality has been increasingly important to town residents and State entities alike.

The Vermont Clean Water Act requires the development and adoption of Tactical Basin Plans for each of Vermont's 15 river basins on a five-year rotational cycle. These plans document explicit actions that have been identified through integration of watershed modeling, water quality monitoring, pollution assessments, and stakeholder input. The Agency of Natural Resources (ANR) assists in the implementation of the plans by using State and federal funding sources, partner support and the public rule-making process for certain protection efforts. The two plans which cover Woodbury are the Winooski River Tactical Basin Plan (TBP), last updated in 2018, and the Lamoille River Tactical Basin Plan which is currently available to review in draft form and will be finalized in the coming months. Participation in the development of these plans can help make sure local watershed concerns are addressed and solutions can be implemented with the support of regional and state partners.

Forest Today, the majority of land in Woodbury is forested (about 86%). Forests help with air purification and carbon sequestration, recharge and purify ground water and act like a sponge, absorbing precipitation and snow melt to be taken up by plants or evaporated back into the atmosphere. Forests also provide the crucial habitat for the health and sustainability of native plants and animal populations. Recent survey respondents highly value Woodbury's clean air and water.

➲ Additional maps are contained within the Woodbury Town Plan 2021 Data & Map Appendix: Slope Map | Elevation Map | Sub Watershed Map | Regional Wildlife Linkage Map Forest Integrity Map | Wetlands, Vernal Pools and Rare, Threatened, & Endangers Species Map | Agricultural Soils Map | Current Use Parcels Map



Map A: Natural Setting

Legend

- Highest Priority Surface Water and Riparian Areas
- Highest Priority Interior Forest Blocks
- Highest Priority Connectivity Blocks
- Rare Species
- Wetlands
- Lakes and ponds
- Swensen Stone Quarry

Roads

- State Highway
- Town Highway Class 2-3
- Town Highway Class 4
- Private Road
- Legal Trail

N W E S

0 0.5 1 2 Miles

Map created May 2021 by CVRPC
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Data Sources
Roads: VTrans, 2019
Use Value Appraisal Properties: VCGI, 2018
Protected Lands: VT Protected Lands Database, VCGI, 2020
Conservation Design Data: Biofinder, 2016

Data is only as accurate as its original source.
This map is for planning purposes only.
This map may contain errors and omissions.

CVRPC
CENTRAL VERMONT REGIONAL PLANNING COMMISSION

Similarly, Woodbury residents recognize the value of local forestlands for their hunting and recreational opportunities as identified during the virtual Community Values Mapping Workshop conducted in early 2021 and facilitated by VT Department of Fish and Wildlife. This land has also been identified by the State as Highest Priority Interior Forest Blocks (as defined by Vermont Conservation Design and BioFinder) due to the best contiguous interior forest conditions they provide for ecological and wildlife habitat values. These blocks are primarily forest but also include wetlands, rivers and streams, lake and ponds, cliffs and rock outcrops. These blocks are also part of the Worcester Range to Northeast Kingdom wildlife linkage, connecting contiguous forest from the Northeast Kingdom eastward to Northern New Hampshire and Western Maine and to the Northern Green Mountains to the west.

Big Back Yards
Average home range of a:
Male bobcat is 27 square miles and a female is 8.8 square miles.
Black bear is 19,200 acres.
Moose is between 1,280 and 12,800 acres.
Fisher is between 4,747 and 9,600 acres.
River otter is between 15 and 30 linear miles of stream.
Source: Staying Connected

The southeast quadrant of town, identified as a Highest Priority Connectivity Block, indicates the value of existing forest cover to provide suitable habitat for wide ranging animals to move across their range and to find suitable habitat and creates opportunities for ecological processes and species diversity as climate and land uses change.

Vermont Conservation Design & BioFinder
Developed by the Vermont Agency of Natural Resources (ANR), Vermont Conservation Design presents a holistic approach to identifying locations of ecological priority. This information is displayed though BioFinder. BioFinder is a database and mapping tool for identifying Vermont's lands and waters that support important ecosystems, natural communities, habitats, and species.

Statewide, forest cover peaked in 2007, and Vermont is now losing about 1,500 acres per year largely due to the fragmentation of larger parcels into smaller ownerships and the sub-dividing ("parcelization") of land into residential lots. Data from the Vermont Parcelization website illustrates this phenomenon- from 2006 to 2016 the number of parcels greater than 100 acres have been decreasing, and while the number of parcels in the 50-100 acre size have grown has a result, there has been a decrease in the number of parcels which are in the 25-50 acre range and an increase in the number of parcels which are under 25 acres.

Over time and incrementally this trend will have the effect of forest fragmentation and subsequent parcelization will affect the economic viability of silviculture (the growing and cultivation of

trees) and reduces the connectivity of forest lands that supports wildlife. Maintenance of the Highest Priority Interior Forest Blocks and ensuring wildlife connectivity is valued at the local and regional level. Under current zoning the minimum lot size requirement is 3 acres across most of the town (with lower acreage requirements in the villages and shoreland areas) and the town does not have subdivision regulations which can guide the division of land. 47% of recent Survey respondents supported the idea of a "conservation reserve" zone with larger lot sizes, which is an additional method towards protecting the integrity of forestlands.

Surface Waters In addition to forests and woodlands, Woodbury's significant surface waters and riparian areas hold rich ecological value. Highest Priority Surface Waters and Riparian Areas, as identified by BioFinder, serve as important habitat for aquatic species. Ensuring the connectivity of aquatic habitats is important for maintaining species diversity and to ensure fish and other aquatic populations can travel extensively throughout the network for seasonal and life cycle needs.

Woodbury Lake and Ponds

1. Buck Lake (39 acres)
2. Cranberry Meadow Pond (28 acres)
3. Dobson Pond (3 acres)
4. East Long Pond (188 acres)
5. Goodall (7 acres)
6. Greenwood Lake (96 acres)
7. Leech Pond (4 acres)
8. Little Mud (10 acres)
9. Middle Woodbury (9 acres)
10. Nelson Pond / Forest Lake* (133 acres)
11. Nichols Pond (171 acres)
12. North King Pond (3 acres)
13. Smith Pond (4 acres)
14. South King Pond (4 acres)
15. South Woodbury Mill Pond (6 acres)
16. Valley Lake / Dog Pond (88 acres)
17. Walton Pond (13 acres)
18. Wheeler Pond (4 acres)
19. Woodbury Lake/ Sabin Pond* (142 acres)

*straddles Woodbury and Calais boundary

Ensuring habitat areas connect is equally important as the habitat itself. Connectors may be land or water that links larger patches of habitat within a landscape to allow for the movement, migration, and dispersal of animal and plants. They can be a forest block, riparian area, or a specific road crossing that wildlife repeatedly use. A number of roads in Woodbury are classified in BioFinder as Highest Priority Terrestrial Road Crossing, which can limit animal movement. Probably the most critical is Woodbury Gulf (RT 14 from Buck Lake Road to the Hardwick town line.) This particular section, and possible future development along it, controls wildlife movement between the Northeast Kingdom and the Northern Green Mountains as mentioned above. Another similar "choke point' for wildlife movement is the far northeast corner of the town, east of Nichols Pond.

Wetlands are an integral component of the surface water complex. Totaling over 1000 acres, wetlands within the Town include swamps, marshes, fens and vernal pools. They are inhabited by a unique variety of plants and animals and are critical to the process of purifying surface and underground water supplies,

storing floodwaters during excessive rains and replenishing water supplies in dry weather, and providing for productive and diverse biological communities. The Vermont Wetland Rules (VWR), establish three classes of wetlands, which are used to determine the level of protection under these rules. Class One and Two wetlands are "significant wetlands" and therefore are protected under the rules. Class Three wetlands are defined as "those wetlands that are not designated as Class One or Class Two wetlands." Most wetlands in Woodbury are Class Two wetlands and as such are regulated by the State. Development or land disturbance is required to respect a 50-foot buffer zone contiguous to all Class Two wetlands to ensure the integrity of the wetland is maintained.

Woodbury's lakes, wetlands, and riparian areas host many of the State identified Rare, Threatened and Endangered species and are tracked by the Vermont Fish & Wildlife Department Natural Heritage Inventory. So defined, they have very particular habitat requirements, are at the edge of their range, are vulnerable to disturbance or collection, or have difficulty reproducing. Their exact locations are not specifically mapped as a method of protection and they include rare vascular plant species along with invertebrate and vertebrate species. Limiting disturbance of these areas helps ensure species biodiversity, a critical component of a healthy ecosystem.

Due to the town's location high in the watershed basin, coupled with the great retentive capacity of its numerous lakes and wetlands, means that Woodbury does not contain extensive flood prone areas. There are limited areas of mapped special flood hazards as identified by FEMA's National Flood Insurance Program (NFIP) and as a member of the NFIP the town is obligated to manage development in the FEMA floodplain according to federal standards. In return property owners are eligible for flood insurance.

The mapped NFIP special flood hazards are principally located around the perimeter of Nelson Pond and Woodbury Lake, however some of the smaller tributary streams are subject to flash flooding and fluvial erosion. The Center Village has been prone to flooding in the past, primarily due to the location of the old village store and gas station which was built over a channelized stream. The building created an obstruction to floodwaters causing water to be diverted into and around the building. This resulted in ponding on Route 14 and water damage not only to the store but to the adjacent house and fire station across the road. A few years ago, the Town received FEMA funding to buy out the store property to remove the store building. The next step in the process will be to restore the natural streambank and localized floodplain to further mitigate and minimize flood hazards. The 2018 Local Hazard Mitigation Plan (LHMP) includes additional information about flood hazard areas. Its contents and associated mitigation strategies are incorporated into this plan by reference.

The removal of vegetation in riparian areas causes the flood retentive capacity to become unstable with stream bank failure in large storm events, leaving adjacent land prone to increased flooding. The most frequent flooding occurs in early spring as a result of snow melt and heavy rains, but flooding has historically occurred in every season. Protecting floodplains, river corridors and riparian areas from encroachment helps retain their natural flood retention functions and decrease damages to public and private property.

The negative effects of flash flooding and stormwater run-off are exaggerated by the development of impervious areas such as roads, parking lots, or buildings; and is exacerbated when the clearing of land is coupled with the presents of poor soils. The runoff is also frequently laden with pollutants such as sediment, nutrients, oils, and other pathogens. The Town has undertaken a stormwater master plan which will help divert some pollutants, however sound management practices in the development of private property will also be needed. (For more info about stormwater management see Rural Services and Infrastructure Chapter.)

Groundwater Groundwater is another essential component of a healthy ecosystem and is intricately connected to the health of area surface waters and wetlands. In dry times and in time of drought, small streams retain the ability to flow from groundwater aquifers maintaining critical habitat for many species. Based upon the 2018 Vermont Groundwater Management Plan, "It is essential that groundwater be more thoroughly investigated and considered, not only in its own right as a valuable resource in need of management and protection, but also as part of an integrated systems approach to understanding and preserving Vermont's environmental health." Currently little is known about the local or regional recharge and discharge areas. The State is working to improve information available for groundwater management for both public health and the environment. Most of Woodbury residents rely on groundwater as a source of drinking water. There is one public water supply which serves the elementary school and the mapped spring protection zone is located uphill from the property. (Additional information about Public Water supply is contained within the Rural Infrastructure Chapter.) Drought and contamination from human activity can threaten this local critical resource, especially in areas with a high water table and in higher density areas, such as in Woodbury Center Village.

Water Quality The environmental quality of Woodbury lakes and ponds has been a concern of Woodbury residents for over three decades. In 1991 the town commissioned the "Woodbury Lakes and Ponds Study" (LPS), which was undertaken as a result of public concern about water quality. The report includes information about the geology, geography and hydrology of the area and at that time found that the Town's water bodies appear to be in reasonably good condition. Today lakes in Vermont are assessed and scored on the VT Inland

Lakes Scorecard which is a user-friendly interface developed by the Vermont Lakes and Ponds Management and Protection Program (VLPP). The Scorecard provides available data on overall lake health by providing a rating of a waterbody's nutrient trend, shoreland and lake habitat, atmospheric pollution, and aquatic invasive species. Most appear to be in reasonably good condition with respect to water quality, although some have elevated levels of phosphorus. The following Woodbury lakes have been identified within the Winooski River Tactical Basin Plan for priority actions:

Priority Lakes/Ponds	Priority Action	Rationale
Greenwood Lake	Shoreline protection	Shoreline and habitat ranked Poor, but not yet affecting water quality conditions and trends.
Forest Lake and Woodbury Lake	Watershed assessment and work to address sediment	Poor (Forest Pond) to Fair water quality trends

Contributing factors to this assessment include increased development along shorelines as local ponds and lakes continue to be attractive locations for residential development coupled with increased recreational usage. The town's Shoreland Zoning District applies to bodies of water 20 acres or greater and includes basic setback and tree clearing provisions. The 2014 Vermont Shoreline Protection Act is designed to regulate activities within 250 feet of the mean water level of lakes greater than 10 acres in size. The intent of the Shoreland Protection Act is to allow reasonable development along the shorelands of lakes and ponds while protecting aquatic habitat, water quality, and maintaining the natural stability of shorelines. The State is responsible for the permit processes and a partnership with the town is critical to its successful implementation and resulting ecological benefits. 2021 survey respondents highly value Woodbury lakes and ponds, and water pollution was identified as a concern.

Roads such as Route 14, County Road, Cranberry Meadow Road, Herricks Cove Road and Dog Pond Road skirt lake shorelines, requiring maintenance and repair projects in close proximity to the surface waters. Implementation of the Municipal Roads General Permit (MRGP) and Stormwater Master Plans are designed to help increase water quality and lessen runoff into waterways. (See Rural Services and Infrastructure Chapter for additional information about MRGP and stormwater.)

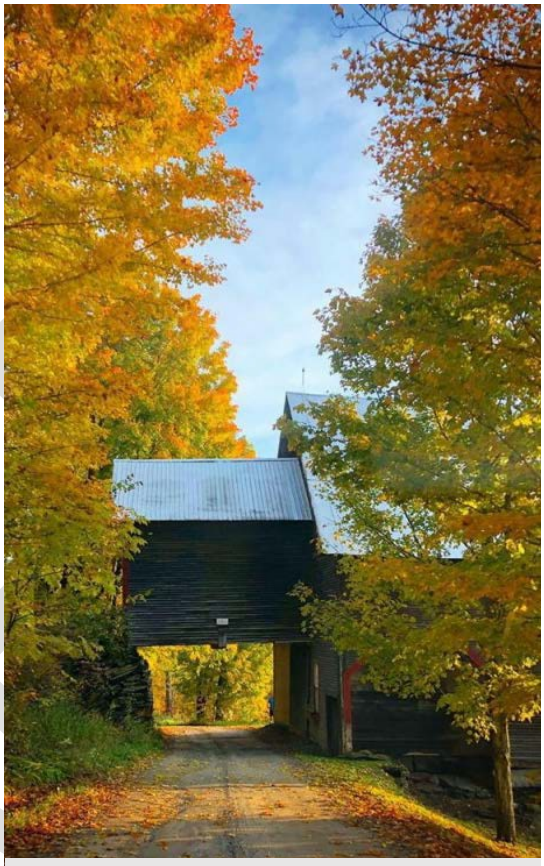
Natural Features and Ecological Systems Goal: Protect and conserve Woodbury's forests, lakes, ponds, and wetlands to maintain and improve ecological functions.

Working Lands

Woodbury's history is rooted to the ability of its residents to work the land and make a living from it. The town was primarily established as an agriculture-based community and does contain some good farmland soils. They are located primarily along the Calais border, between Nelson Pond and East Hill in South Woodbury, and in the vicinity of West Woodbury, located in the extreme northwest corner of Town. A limited amount of land is currently in active agricultural use and a small percentage is enrolled in Vermont's Use Value Appraisal program for agricultural use. Although few of Woodbury's agricultural landowners are full time farmers, the open spaces they provide still play an important role in defining the character of this rural community.

Today forest land is critical to Woodbury's identity. These lands not only provide valuable ecological benefits, many of Woodbury's large, managed forest parcels are important sources of lumber and cord wood. The fact that more than half of Woodbury's households burn wood as their primary heat source (compared to 18% for the Region), attests to its availability and local importance. Compared to agriculture, a significant amount of land (56%) is enrolled in Vermont's Use Value Appraisal Program as forest use. If large parcels of forest are fragmented through subdivision, the natural and economic value of the forest decreases and silvicultural practices become less economically viable and less aesthetically desirable to new residential neighbors. The Current Use program is one of the most effective forest conservation tools, serving the economic interests of land owners as well as the public good.

From the late 1800's to the 1940's granite extraction was the major industry in town. The



Working Lands & Water Quality

Farming practices are expected to adhere to the State's Required Agricultural Practices (RAPs) which include required practices and management strategies to reduce the impact of agricultural activities on water quality. For more information: https://agriculture.vermont.gov/rap

Silviculture and Forestry operations are expected to follow the Acceptable Management Practices (AMP's) to maintain water quality on logging jobs. For more information: https://fpr.vermont.gov/forest/managing-your-woodlands/acceptable-management-practices

Current Use Program

Use Value Appraisal, or "Current Use" as it is commonly known, is a property tax incentive available to owners of agricultural and forestry land in Vermont. Eligible landowners can enroll in the program to have their land appraised at its Current Use (farming or forestry) value rather than fair market value. This method of appraisal results in significant property tax savings to the landowner in every year that the land remains enrolled in the program. While enrolled, the land cannot be developed and, instead, must remain agricultural or forest land. If the land gets developed then the landowner will lose the favorable tax status and pay a financial penalty.

Source: VNRC

Swenson Granite Company quarry (off the Woodbury-Cabot Road), which was re-opened in the 1970's, continues to operate and recently expanded (also see Local Economy section.) Other earth resources in Woodbury include: pyrite, smoky quartz, apatite, zircon, calcite, feldspar, epidote, rutile, magnetite, and most importantly, sand and gravel. Woodbury's sand and gravel deposits are glacial in origin, and, like human habitation, agriculture, and groundwater resources, these deposits generally follow the courses of streams. While sand and gravel deposits may yield needed materials for road and building construction, these coincidental development patterns render their extraction a matter of some sensitivity. It is vital that care be taken in the permitting process for future extraction operations to avoid land use conflicts and environmental damage.

Working Lands Goal: Strengthen and promote the long-term viability of working lands that are committed to sound management practices and contribute to the local economy

Scenic Areas

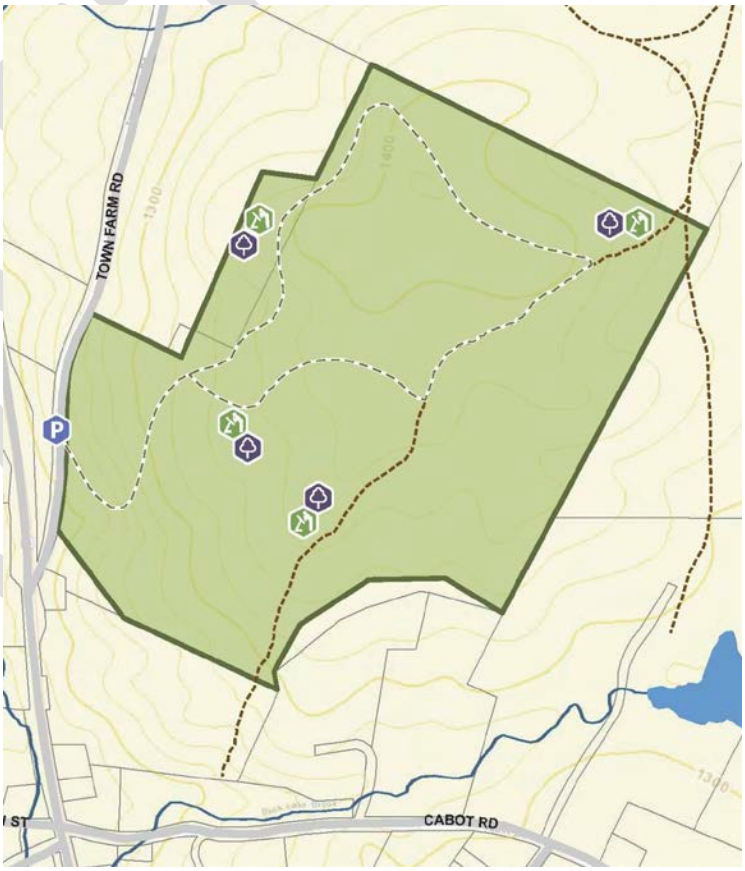
Woodbury's natural setting contributes greatly to its scenic beauty and its unique identity. The lakes, ponds, wetlands, forests, and hills as well as its historic and cultural resources are of great value to the residents. (For more about Historic and Cultural Resources see the Sense of Community Chapter.) As reinforced from the 2021 community survey results and from the Community Values Mapping Workshop, Woodbury's most outstanding scenic features include the broad views of Woodbury's landscape enjoyed from Nichols Ledge, and the undeveloped ridgeline of Woodbury Range. While they deserve protection, these sites are located on private property. When asked "are you in favor of setting aside or somehow preserving certain scenic, historic or natural areas?" 74% or respondents agreed. Any strategy for protection must be consistent with the rights of land owners.

Scenic Areas Goal: Protect and maintain significant scenic areas and views.

Outdoor Recreation

Woodbury's natural setting provides a wealth of outdoor recreation opportunities. Many residents enjoy hiking, hunting, fishing, boating, swimming, cross country skiing, snowshoeing, snowmobiling, ice skating and off road motorsports. The town maintains a collection of public lands that are open for public recreation, they are primarily located in the vicinity of Woodbury Center Village and include the 65-acre town forest, the school playground and adjacent baseball field, and the Woodbury Center Village wetland property. During the winter months, in partnership with the Friends of the Woodbury Elementary School, a community ice skating rink is formed behind the Town Hall. (For more information on these facilities see the Rural Infrastructure Chapter.)

In 2018 the town participated in a collaborative project with the Department of Forest, Parks and Recreation to develop a Recreation Plan for the town forest. The plan adeptly identifies that "outdoor forest-based recreation is both a great opportunity and a growing challenge. Recognition of the economic and community benefits of forest-based recreation is on the rise. Concurrently, increased pressure from multiple recreation groups accentuate the need for planning assistance to balance the growing recreation interests and the health of the forest." The development of the Recreation Plan was in response to this recognition and proposes a balanced approach for use of this public resource.



Proposed Town Forest Trail System
Source: 2018 Town Forest Recreation Plan

The Town Forest Recreation Plan proposes rehabbing sections of an existing trail and building a new interconnected trail loop to expand non-motorized recreation at the town property. The plan includes an action plan with corresponding strategies for parking and access; trails; other facilities and structures; education and programs; mapping, outreach, and promotion; and administrative actions which include the development of a management plan.

Abandoned railroad beds and Class 4 roads, as well as trails and logging roads on private land, provide recreation for hiking, bicycling, cross-country skiing, snowmobiles, dirt bikes and ATVs and other all-terrain and off-road motorized vehicles. It should be noted that logging roads and trails on private property are not automatically available for public access. Gaining permission is recommended before accessing private property. Woodbury's back roads are popular with bicyclists and local organizations have put together recommended bike routes in the area.

The Vermont Association of Snow Travelers (VAST) maintains a seasonal network of snowmobile trails through Woodbury that is enjoyed by many residents and visitors alike. A private golf course operates on East Hill Road and during the winter months the property is open for cross country skiing.

The State owns boat launches on Greenwood Lake, Nelson Pond and Woodbury Lake, providing public access for fishing and boating to the larger lakes. The State also owns a primitive fishing access on Valley Lake. The State of Vermont also owns the 275-acre Buck Lake Wildlife Management Area which is open for public recreation and provides a primitive fishing access to Buck Lake. The Department of Fish and Wildlife owns and operates the Green Mountain Conservation Camp on this land each summer. The camp offers week-long youth camping experiences with an emphasis on learning about the environment and outdoor sporting skills.

Linking the school and the town forest properties together with a pedestrian path or trail with other Village locations would be a great benefit to enhancing the existing recreational amenities. Linking local trails to more extensive regional networks could also be explored as a method to expand recreational access for residents and visitors.

The town has underutilized town green areas and despite the wealth of lakes and ponds in the town, there is no public swimming area for town residents. There has been ongoing discussion over several years about establishing a beach for public use. The survey conducted in 2000 showed overwhelming support for a Town-owned and managed beach which was echoed in the 2020 Survey. The majority of respondents also supported the town to raise funds for such a facility. A public beach and swimming area would be an outstanding resource for residents of all ages. Collaboration with neighboring private property owners and other lakeshore owners would be necessary.

Outdoor Recreation Goal: Increase recreational opportunities afforded by Woodbury's natural setting for residents and non-residents.

Sense of Community

Historic & Cultural Resources

Woodbury's natural setting influence past and future settlement patterns and uses of the land. Abenaki Native Americans occupied most of Vermont region prior to European Colonization. Abenaki hunted and fished throughout the area, traveling along waterways and established trails. They had no formal written language and little evidence of their activities and settlement locations have been discovered. According to a Times Argus article titled "Along the route of Native Americans" dated September 9, 2006, a pair of 6,000 year old spear points were found in the vicinity of Nelson Pond/Forest Lake and Number 10 Pond (aka Mirror Lake). Archeological evidence in Vermont and New England indicates indigenous people likely formed transient settlements in river valleys and at the confluence of waterways, and as such, these places in Woodbury may hold undiscovered archeological evidence.

Petroglyphs carved into the bedrock near Cranberry Meadow may be evidence of pre-colonial inhabitants in Woodbury. As stated in the newspaper article referenced above, State archeologists believe the footprints were carved before 1800. Local legend suggests the waist-high rock carvings may have been etched by more recent residents. While their origin has yet to be verified, their existence is a topic of unique local lore.

Much of Woodbury's human history is reflected in its built environment and can be attributed to European settlers. The Town was chartered on August 16, 1781

by the Vermont legislature to Colonel Ebenezer Wood, William Lyman, Esq., and sixty associates. Woodbury was an agricultural community; early inhabitants found the best farmland in the western and southern parts of town. In the early 1800's the first village settlement grew up around a sawmill located in South Woodbury. Through the 19th century, additional water-powered industries, stores, a post office, Congregational Church and one of the town's ten school houses was established in the hillside village. As identified in the State's Historic Sites and Structures Survey many of the village structures were built in the Greek Revival style and as the area has experienced little new construction, the hamlet is clearly recognized as historic settlement from a bygone age.

During the 1880's, several small granite quarries were operating in the hills of Woodbury, but production was limited by the lack of efficient transportation. In late 1894, a company was chartered to build a 9.5 mile railroad between the quarries in Woodbury and the finishing mills in Hardwick and Granite extraction became the major industry and led to the Town's rapid growth in the late 1800's. "Woodbury Gray" granite was used in the construction of the Pennsylvania State Capitol in Harrisburg and the City Hall & Cook County Courthouse in Chicago. The local stone has also been featured in other buildings across the country including hundreds of banks and post offices. Elements of Woodbury's rural landscape are prominently integrated into other cities built environment.

Additional information about the local granite history can be found on the Swenson Granite blog post titled "The Rich History of Woodbury Gray Granite" posted by Amanda Pittsley on October 14, 2019

The granite industry drew prominence away from South Woodbury Village, and Woodbury Center Village grew up along the banks of the Kingsbury Branch and the major north-south transportation route. This location become the political center of town and the Woodbury Town Hall built in 1842 is among the oldest in continuous use. The Methodist Church was built in the Center Village and a granite company store was located nearby. Much of the granite worker housing was also built in the vicinity due to its easy access and level building sites. The buildings reflect examples of Greek Revival and Queen Ann style architecture, the prevailing styles of 19th Century New England. In the late 1800's and at the height of the granite industry boom, the quarry owner built a small company village comprised of six homes east of the Village Center. Today five homes remain and their connection to Woodbury's industrial hey-day is likely little know by current residents. The current zoning regulations in South Woodbury and Center Village require one acre per dwelling unit and two acres for commercial uses, which in some cases would result in a new development pattern which is a departure from the historic settlement pattern.

A more prominent response to Woodbury's rural prosperity was the construction of the Woodbury School in 1914. Located on the west side of the Center Village, the school was built with four large classrooms on the main floor, smaller classrooms and offices on the basement level and a gymnasium on the top floor. The building is a unique and substantial asset as it has continued to function as an educational and community center for the town.

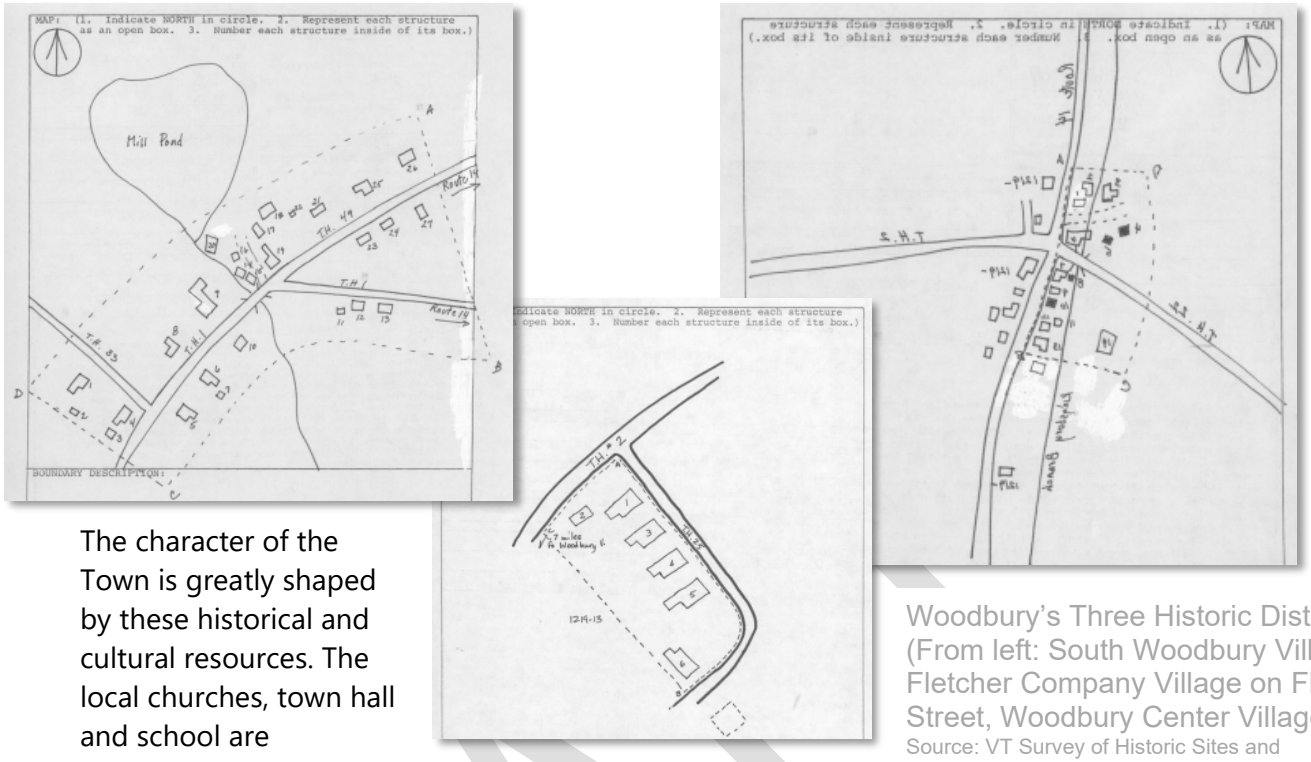
Historic view of the Woodbury Graded School
Source: VT Survey of Historic Sites and Structures

During this same period, at the turn of the 19th century, American workers were being afforded more time off work giving rise to an increase in leisure time. People sought respite in rural locations to escape from industrialization in urban areas. In 1915 the White Rock Inn was constructed and drew visitors to enjoy

Woodbury Lake. Over time small, privately-owned lake side cabins and cottages replaced the larger hotel(s). Woodbury's lakes have continued to attract seasonal residents and visitors resulting in a strong summer lake community.

The onset of World War 1, coupled with a declining demand for granite, saw the closure of the granite quarry and Woodbury returned to an agricultural community. The back-to-the-land movement of the late 1960's and early 1970's, along with the completion of the interstate system, drew a wave of in-migration to Central Vermont and Woodbury. A 2014 Vermont Historical Society article (*Vermont History* Vol. 82, No2) indicate there was at least one commune within town boarders. This population increase resulted in the reoccupation of farmsteads and new residential development along back roads. Today Woodbury is bedroom community, no longer reliant on agriculture, visible evidence of the counter culture impact is not obviously seen, however remnants of this social movement is integrated into the fabric of Woodbury's cultural history.

In addition to the buildings of historic and architectural importance, the town currently maintains five cemeteries, each with some gravestones dating from ca. 1840. For example, historic research found Woodbury had the distinction of sending more of its sons to fight in the Civil War than any other town of its size in the state. As with all cemeteries, there is much local history to be assimilated at these sites and they provide a visible record of the town's ancestors.



Woodbury's Three Historic Districts (From left: South Woodbury Village, Fletcher Company Village on Flat Street, Woodbury Center Village)
Source: VT Survey of Historic Sites and Structures

The character of the Town is greatly shaped by these historical and cultural resources. The local churches, town hall and school are significant resources which have served, and continue to serve, as important and valuable community and civic gathering places. They host important and beloved cultural events, such as the annual Pie Breakfast and the Bessie Drennan Days.

Today, the Woodbury Elementary School and Town Hall are both listed on the National Register of Historic Places; the Woodbury Elementary School is listed on both the State and National Register of Historic Buildings. Being listed on either the State or National Register does not, in itself, impose any obligation on the property owner. There may be some considerations to take into account if building improvements are to be undertaken with State or Federal funding.

The map of Woodbury from Beers Atlas of 1873, depicts locations of buildings and structures in existence at that time. When compared with existing development, it can serve as a valuable resource in identifying potential historical or archeological resources. Additionally, in 1979 the State undertook a Survey of Historic Sites and Structures in Woodbury. The inventory includes a narrative description and photographs of three historic districts (South Woodbury, Woodbury Center Village and Fletcher Worker District) and many homes and out-buildings. The listing is outdated and buildings listed in the inventory affords no specific protection for a structure or benefits for its owner. It is merely intended to catalogue historic resources, which may serve to facilitate individual or local protection efforts.

The Woodbury Historical Society coordinates talks and events about local history and members have formed an informal archive. Displaying and preserving the collection for the benefit of current and future residents would be a unique local asset.

Historic and Cultural Resources Goal: Protect and preserve important historic and cultural resources and make information about these resources available.

Housing

Based upon the 2019 American Community Survey (ACS) data there are 662 housing units in Woodbury. The majority (48%) are classified as vacant by the Census Bureau, meaning these units are only in use during certain seasons or for occasional use throughout the year. Since 2000 it appears the number of vacant units has decreased slightly (-4.8%), however this overall percentage is considerably higher than the County and State figures.

Woodbury 2020 Grand List	
Residential Units	413
Apartments	0
Seasonal Units	259
Total	672

More recent data released from the Vermont Tax Department illustrates the increase of residential property purchases by out-of-state buyers in recent years. This trend increased dramatically during the COVID-19 pandemic. In the past 4 years, the number of transactions where a buyer listed an out of state mailing address increased from zero transactions to 8 in 2020. This number is higher than trends experienced in neighboring Central Vermont towns. Across the state resort towns have experienced the greatest impact. Monitoring this data into the future will provide insight into how COVID-19 has impacted people's preferences and local demographics.

Woodbury has a strong summer lake community. Based upon 2021 survey results, respondents stated they do not anticipate moving to their second home permanently in the near future, however local knowledge may indicate otherwise based upon current activity. Preparing for some of these seasonal homes to be converted into year-round owner-occupied units should be expected. While "adaptive re-use" of vacation homes is not in itself undesirable, this trend may exacerbate such issues as limited septic capacity, shoreland encroachment, and deteriorating condition of camp roads.

Just over 30% of the current housing stock was built before 1940, and then the pace slowed in the succeeding two decades. Housing construction then picked up in the 1960's and experienced a steady average growth rate of 11.5% per year over the following 50 years; this follows a similar trend throughout Central Vermont. Since 2010 the rate of growth has dropped off, and on average only approximately 3 units have been built each year since. As a third of the stock was

built before 1940, and half the stock was built before 1970, lead paint may be a concern along with raising costs associated with maintaining and heating older buildings.

The majority of residents (70%) own their homes and based upon American Community Survey (ACS) data all homes are single, detached units (i.e. single family dwellings and mobile homes.) Recent Grand List data also lists zero commercial apartments, however it should be noted that based upon local knowledge there are at least a handful of small apartment buildings in town. A small number of property owners are choosing to lease units as short term rentals, based upon housingdata.org; in the past couple of years about eight to ten properties were available in Woodbury. The lack of multi-family dwellings (such as two, three, or four-unit buildings) indicates a lack of options for people seeking less expensive housing or those who live alone, or wish to downsize. Additionally there are no group quarters or group living facilities which would include nursing homes, homeless shelters or other types of care homes. As people in Woodbury age, residents seeking or needing assistance would likely have to leave the community. Current zoning regulations require one or three acres per dwelling unit, depending on the zoning district, which inhibits the viability of being able to convert an existing building or develop a new building with two, three, or four-dwelling units.

Recent survey responses indicate that one of the primary reasons people live in Woodbury is affordable housing. Median reported home sale prices have fluctuated over recent years and in some years actually exceeded County-wide medians. The fluctuation can be attributed to the small number of sales per year in Woodbury, but in general home values continue to increase and are on a similar trend to County medians.

A common definition of housing affordability is that total housing costs are less than 30% of household income. Based upon this measure the majority of current residents are able to afford to live in Woodbury and are not cost burdened. The U.S. Department of Housing and Urban Development (HUD) defines low-income households as those with income between 30%-50% of the county median income ($20,497 - $34,161) and moderate income households as those with between 51-80% ($34,161 - $54,657.) These households would struggle to find housing which is affordable in Woodbury. According to VHFA's Affordable

➲ Housing and Economic Data Charts are contained within the Woodbury Town Plan 2021 Data & Map Appendix:

Estimated Housing Units by Housing Type Chart | Estimated Housing Units by Year Structure Built Chart | Median Home Sale Price Chart | Unemployment Rate Chart | Occupations Chart | Means of Transportation to Work Chart

Housing Directory, there are no subsidized affordable rental housing units for low income families.

Most of the residential development has occurred outside of the historic village areas, away from the major transportation route and along Class II and Class III roads. As Woodbury is no longer an agricultural-based community most households rely on individual vehicles to travel to work and access basic services such as groceries. Individual transportation expenses (gas, maintenance, insurance and registration) are additional costs that should be factored into the cost of living in Woodbury.

Housing Goal: Increase the diversity of housing options to meet the needs of a wide range of income levels and preferences.

Local Economy & Community Development

In the past couple of years, the labor force in Woodbury has averaged about 568 people. The exact number fluctuates slightly in part due to seasonal changes. Unemployment has been lower than the State average and while local residents did experience some increase in unemployment due to the recent COVID epidemic, recent figures suggest people are returning to work.
During the height of the granite industry in the late 1800's the local quarry employed thousands of people who lived in Woodbury. The process of extracting the granite has changed and no longer relies on significant human power. While the quarry is very productive, it only employs a handful of people. The elementary school is one of the largest employers in town. The town maintains a local business directory on the municipal website, it includes a variety of personal services including home, garden, vehicle maintenance and repair. Last year's Grand List data indicates only 11 commercial/industrial properties in Woodbury. Aside from the school, the majority of local businesses and places of employment are small scale, sole proprietorships, and often work is done at home.

The two villages used to be the center of commercial activity, however today the majority of economic activity is dispersed. In 2015 the town undertook the Planning for the Future of Woodbury Village planning project in part to "Explore options for strengthening the town's economic base" including assisting the town with developing a Village Plan that "should look at employment potential in the village along with community services and future roadway connections to village land..." Key recommendations included:

- A vibrant village with amenities and access to resources will encourage interest, investment and attract new residents.
- Identify public water supply/wastewater infrastructure improvements needed for future infill development, including potential limitations.

When asked in a recent survey what businesses they'd like to see in Woodbury, respondents overwhelming stated their support for a general store, with additional desires for a restaurant and/or café. Food service and food processing operations even at a small scale do require adequate water and wastewater capacity which may be limited at this time.

Today most residents (just over 80%) work outside of town and the majority of them head southward to the Montpelier/Barre area for work. The remainder (about 17%) work locally within the municipal borders. When asked in a recent survey, 40% of respondents said they would like to see more employment opportunities in Town. More local residents may be afforded the opportunity to work remotely as a result of the COVID pandemic, this would result in less people commuting on Route 14. However limited availability to high-speed internet access could impact effectiveness of remote work and inhibit other business operations which would benefit or rely on this service. For more information see Telecommunication and Broadband Connectivity section.

The management, business, science and arts occupations sector employs almost 40% of Woodbury residents followed by the sale and office occupations. However, the sale and office occupations sector is the one sector which has experienced the most growth, while employment in other sectors by Woodbury residents have been in decline.

Due to its abundance of natural resources, Woodbury has a history of land-based operations such as resource extraction and agriculture. Employment in this sector has been in decline and today employs about 17% of Woodbury residents. Forestry, agricultural and resource extraction, when undertaken in accordance with State regulations and adherence to best management practices, are viable industries which can help preserve the town's rural character.

The Woodbury median household income ($63,542 in 2019) has risen over the past decades and is now greater than the County and State medians. However wages earned by people who work in Woodbury are quite a bit lower. Data indicates there are about 120 jobs in Woodbury and 70% are filled by local residents. About 10% are filled by people from Hardwick and 5% from the Barre area.

Preparing the next generation to enter the workforce is an integral component of economic development planning. Studies demonstrate that the very early years (0-5 years old) are critical to the development of learning and skill building and that children who have high-quality early learning and development opportunities have greater success in school and in life. Quality affordable childcare is critical to both working families (who are currently in the labor force) and childhood development (for the next generation of the labor force.) Based

upon the Bright Futures Child Care Information System there are no licensed child care providers or registered child care providers in Woodbury. However there are 10 located in neighboring towns. Yet, most located to the north in Hardwick, the opposite direction of most residents daily commute.

Licensed Childcare Program vs Registered Family Child Care Home

Licensed Program: A child care program providing care to children in any approved location. The number and ages of children served are based on available approved space and staffing qualifications, as well as play and learning equipment. A Licensed program must be inspected by the Department of Labor and Industry's Fire Safety Inspectors and must obtain a Water and Wastewater Disposal Permit from the Agency of Environmental Conservation. A Licensed program is considered a public building under Vermont Law. Types of licensed programs include: center based child care and preschool program, afterschool program, and licensed family child care home.

Registered Family Child Care Home: A child care program approved only in the provider's residence, which is limited to a small number of children based on specific criteria.

Source: VT Department of Children and Families

Woodbury is within the Orleans Southwest Supervisory Union (OSSU) which consists of six schools which serve approximately 1,190 Pre-Kindergarten -12 students in eight school districts across six towns and four counties. The Woodbury Elementary School provides PK – 6 grade education to local children, who then must travel to Hardwick to attend Hazen Union High School. In 2019, as required by the State Board of Education under legislative Act 46, Woodbury School District was merged with Greensboro, Hardwick, Lakeview, and Stannard school districts to create the Orleans Southwest Union Elementary School District. The Woodbury Elementary School building is a historic resource and its continued educational function a valuable and essential community asset.

To access higher educational opportunities Woodbury residents could find a range of colleges and universities within a 1.5 hour commute. Vocational and technical training programs are less accessible with fewer choices and opportunities. As a result of the COVID pandemic more educational opportunities will likely be accessible remotely.

The mission of the 2020 State of Vermont Comprehensive Economic Development Strategy (CEDS) is to improve the economic well-being and quality of life of Vermonters while maintaining our natural resources and community values. The strategic planning document identifies challenges to economic development in Vermont and also lays out a set of high – level strategies toward accomplishing the mission. These challenges and strategies are also applicable to Woodbury. They are summarized below:

What is a statewide Comprehensive Economic Development Strategy? This statewide CEDS is a strategic document that establishes key goals the state will work toward over the next five years to improve the quality of life and economic wellbeing of all Vermonters while maintaining our natural resources and community values. It suggests the measures that can lead us there and identifies projects that may be implemented by a variety of organizations, public and private.

Source: 2020 Executive Summary, Vermont 2020 Comprehensive Economic Development Strategy

Challenges	Strategies
Growing income and wealth inequality Aging infrastructure, or lack of (i.e. lack of sewer and water capacity) Aging population and sm. business succession Small tax base and limited funds for business incentives or infrastructure investment Natural resources base which is critical to VT brand (food, tourism, recreation) is to climate change, pollution and resource depletion Managing run off and water pollution with land-based business High energy costs	Make financing accessible Educate workforce Build infrastructure Enhance the VT brand Preserve the working landscape Cultivate innovation Plan for resilience

The Central Vermont Regional Planning Commission (CVRPC), in partnership with the Central Vermont Economic Development Corporation (CVEDC) is currently in the process of developing a CEDS as part of a multi-regional effort (CVEDC provides business retention and expansion technical assistance and provides education and advisory services). Upon its completion this document will supersede the State CEDS and may provide additional information to Woodbury in its economic development planning in the future.

Economic development is primarily focused on the creation of wealth, in which community benefits are created secondarily. Whereas community development is a process for making a community a better place to live and work. During the public planning process Woodbury residents stated they valued the sense of community, and collectively expressed desires for a community gathering place (a third place to socialize which is separate from a place of employment or within a private residence) to foster social interactions such as a store, café or restaurant. In today's economy these types of private businesses in rural communities are likely challenged by high start-up costs and access to capital. However local Vermont communities (such as Peacham and Calais) are demonstrating success with forming public-private partnerships in order to preserve these rural hubs. Survey respondents also expressed interest in a town green-like outdoor space for picnicking, senior activities, or possibly to host a farmers market. In recent history Woodbury Village hosted two stores, which are now closed; the school and town library functions as the principle gathering place for those who have young children and for people engaged in municipally sponsored activities and meetings.

During the course of developing this plan a Second Homeowner Survey was developed to understand more about this sector of Woodbury's population. As expected most second homeowners visit during the spring, summer, and fall

months. Survey responses reinforced a desire for a local store and restaurant and indicate interest in a local market for groceries and home maintenance and repair supplies. Currently these are being procured in neighboring towns.

Local Economy Goal: Support the viability of local businesses, and increase access to employment, training and educational opportunities in Woodbury by encouraging provision of services.

Community Development Goal: Increase the vitality of our village centers, South Woodbury and Woodbury Center Village, to benefit the existing community and attract new residents.

Rural Services and Infrastructure

Transportation

Woodbury's transportation system has evolved considerably over the past 100 years. Its original purpose was to support an agricultural community with a few mills. Later it expanded to include a railroad line serving the granite quarries, construction began in April, 1896. This rail line featured extremely steep grades (averaging 5%, with a maximum of 7%), and reached 1,130 feet in elevation, the highest point served by a Vermont railway. The peak years for the quarries and the railroad were 1904-1916, and passenger service was offered from 1911-1919. Today there are no active rail lines in Woodbury providing passenger or freight service. The closest airports providing limited passenger service are located in Morrisville and in Berlin. Private airstrips are not uncommon in Vermont and in recent years resort towns have seen an increase in private helipads. While one was proposed in Woodbury, it was never constructed. The principal mode of transportation in Woodbury is via automobile, truck or van.

As identified in the Economic Development section, most employed Woodbury residents commute to other municipalities for work. Like most Vermonters, the majority of Woodbury commuters drive alone in a car, truck or van (about 77%). However, the average commute time for locals is longer (35 minutes) compared to state average (23 minutes.) As noted in Woodbury's enhanced energy plan, transportation accounts for approximately one third of the overall energy use in Vermont, statistically higher than the National percentage. This is due to the state's rural character, more dispersed population, as well as a relatively small industrial base. Petroleum combustion in the transportation sector is also the

state's largest contributor to greenhouse gas emissions. One component of reducing fossil fuel-based energy used in the transportation sector is to convert or replace older vehicles with alternative fuel vehicles such as electric or biodiesel and provide EV charging stations locally. More data on this topic is contained within Woodbury's energy plan as contained within the appendix and incorporated into this plan by reference.

Very few people car pool to work and there is no park-and-ride facility located in town to support the organization of multiple people commuting together. The Town has the authority to designate a park-and-ride site, such as the Town Clerk's Office in South Woodbury, which already sees some unofficial use as such.

The Rural Community Transportation non-profit organization provides very limited public transit service through Woodbury along the RT 14 corridor. There are 2 stops in Woodbury. Green Mountain Transit Authority (GMTA), Vermont's only transit authority, coordinates limited shuttle service to the Plainfield Health Center and a network of volunteer drivers who can provide rides as needed for qualifying Woodbury residents, for medical appointments, shopping or visiting. This service primarily benefits the elderly and disabled. Low rural population density limits financial viability of bus and shuttle services and public transit agencies rely on ridership to demonstrate need and also often rely on municipal financial contributions to support these types of services.

There are no sidewalks in Woodbury or designated bike lanes. Woodbury Center Village is one location which has experienced some pedestrian activity due to the proximity of the school, post office, former stores, informal town greens, and residential buildings. Recreational bicyclists prefer to travel the backroads. In 2015 the town funded the Woodbury Village Planning Study, the purpose of which was to develop Center Village streetscape design options. The report recognized existing conditions that included:

- Route 14 dominates the character of the village center; and
- Lack of sidewalks and consistent shoulder/break down lane hampers bicycle and pedestrian use and safety.

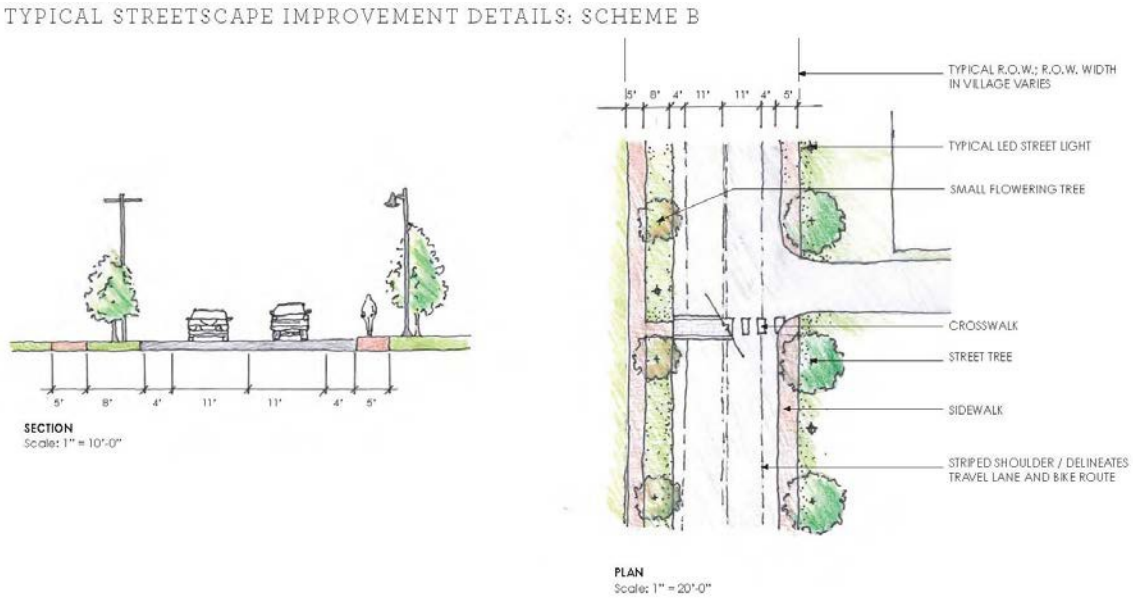
The Report identified issues and opportunities that included:

- With improving telecommunications and transportation networks more opportunities exist for attracting businesses that would benefit from a rural yet accessible location such as Woodbury.
- Connections and linkages to the town's exceptional water features can and should be explored.
- Streetscape enhancements need to be developed in concert with Agency of Transportation (VTrans) and their oversight and planning for State Route 14.

Specifically with regard to transportation-related items, the Report recommended:

- Connectivity to resources and assets north and south.
- Bike route on both sides of Route 14 connecting south from the Center Village to the boat launch at Sabin Pond.

Overall conclusions included the development of streetscape designs to enhance the public realm and highway corridor that characterizes the village.



Village streetscape option
Source: Woodbury Community Planning Project

In 2011, the State adopted a Complete Streets policy which requires that the needs of all transportation users, regardless of their age, ability, or preferred mode of transportation (such as bike and pedestrians) be considered, regardless of the project's funding source in state and municipal transportation projects. While not an entirely new concept, adherence to this directive would also benefit a range of Woodbury residents.

Recent recreation planning efforts at the town forest located just north of the village has prompted recent interest to create a pedestrian link between the school and forest property. This would require coordination with VTrans to navigate safe passage along and across US Route 14, Woodbury's most heavily trafficked road.

The town's principal paved road, US Route 14, is classified as a "minor arterial" by the VTrans. Minor arterials connect towns and allow movement throughout and between counties. Route 14 connects Woodbury to the Barre/Montpelier area further south, and to Hardwick and the Northeast Kingdom further north, and serves as a conduit for traffic between these areas.

The 2003 Woodbury town plan identified traffic volumes on Route 14 in Woodbury had grown approximately 25-30% since the mid-1980's and that the

road currently handles an average of about 2,700 vehicles a day. Based upon the Vermont Transportation Data Management System average traffic volumes have not increased as significantly and the trend flattened. Based upon local data from traffic counts, traffic has been increasing, especially the amount of construction trucks and tractor trailers, such as those hauling solid waste to the Coventry landfill. This type of traffic, along with increased traffic speeds, cause safety concerns, especially in the Center Village and along Woodbury Lake. Enforcement coupled with other traffic calming solutions would be beneficial.

A review of Vermont Public Crash Data indicate a low number of incidents. All crash reports involving motorized vehicles on all public highways are submitted to the State of Vermont and are available for query. Between 2010-2020 there were sixty crashes (one fatal); the locations and conditions varied such as speed, poor visibility, and winter weather. The data doesn't indicate a particular problem intersection or stretch of road.

The state highway classification system classifies town roads. The classification system serves as the basis by which the state allocates highway financial aid to municipalities. The classification system refers primarily to highway conditions. Within this classification system, Woodbury town highways are categorized as follows:

Road Class	Description	Condition	Miles
Class 1 State Highways (US RT14)	State-designated town highways that serve as extensions of state highway routes and carry a state highway number.	paved	7.691
Class 2 Highways (Cabot Road, Foster Hill Road)	Locally designated town highways that carry more than normal amounts of traffic and connect neighboring towns and are primarily the responsibility of the Town.	paved / gravel	5.05
Class 3 Highways	Other town highways that are maintained for year-round use by pleasure cars.	gravel	31.82
Class 4 Highways	All other town highways; minimal maintenance requirements. Class 4 Town highways include pent roads (public roads that may be gated by permission of the governing body). The Town's responsibility for these roads is limited to maintenance of	varied	24.75

	drainage structures (bridges and culverts) and, recently, erosion issues per the MRGP. Roads are maintained in the summer season, no winter maintenance is provided by the town.		
Legal Trails	Public right-of-ways which are not a highway and are designated through legal proceedings. Legal trails include previously designated highways and new public-rights-of-ways laid out as a trail by the Selectboard for the purpose of providing access to abutting properties for recreational use. Public right-of-ways are not highways; and there are no statutory maintenance requirements.	varied	1.2
Source: VT Agency of Transportation Town Highway Maps			

VTrans maintains an informational website titled vtransparency.vermont.gov which contains information about state highway road conditions, maintenance work, scheduled projects and other infrastructure conditions.

Route 14 north of Bailey Bridge Road was repaved in the early 2000's and its pavement condition is currently classified as "Fair" based upon VTrans' *Pavement Condition* portal. The stretch of Route 14 southward to Calais is classified as "Poor" or "Very Poor." No improvements or projects are planned in the next 3 years. US Route 14 is eligible for funding from the state for improvements. Improvements to the road need to be recommended by the Central Vermont Regional Planning Commission (CVRPC), Transportation Advisory Committee (TAC) in order to be considered by the Agency of Transportation. Woodbury is represented on the CVRPC board and does have representation on the TAC.

The Woodbury Highway Commissioner and Road Crew under the supervision of the Select Board are responsible for managing and maintaining the municipal road network. Creation of new access points (driveways) require municipal approval however new accesses and work within the Route 14 right-of-way does require VTrans approval. Maintenance of the local system requires the purchase, maintenance and storage of expensive vehicles, equipment and materials, along with a dedicated workforce. Seasonal wear and tear, challenging winter conditions, combined with increasing damage caused by heavy rain events and flooding make this a significant undertaking.

In response to statewide flood damages cause by tropical storm Irene in 2011, the State of Vermont is in the process of developing the Transportation Resiliency

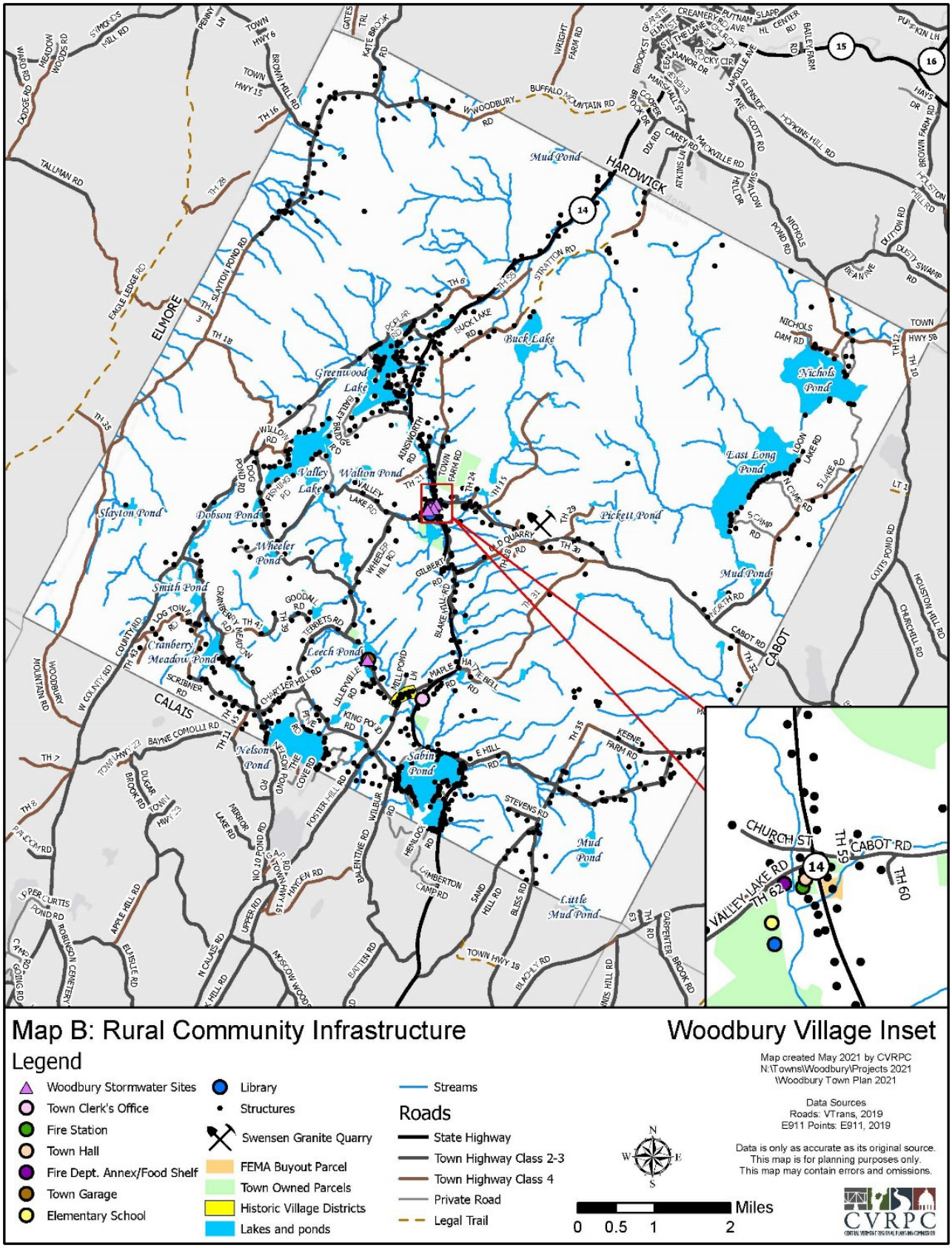
Planning Tool (TRPT). Utilizing a watershed-level, spatial analysis, this mapping tool will identify the flood-risk vulnerability of the road system caused by river processes and identify specific road segments, embankments, and structures susceptible to such risks. Once data for Woodbury is uploaded this will provide a resource toward building flood resilience in the transportation system.

To further hazard mitigation efforts and increased flood resilience, Woodbury adopted a Local Hazard Mitigation Plan (LHMP) in 2019. With this local plan in place the town is able to apply for certain federal programs to undertake eligible mitigation projects. Woodbury's LHMP identifies the town's current hazard controls and protective works; its top hazards; and list specific mitigation strategies and possible funding sources. The information contained with the LHMP is recognized to be a component of this town plan and is incorporated into this plan by reference.

Following a federally-declared disaster, such as flooding, municipalities may seek reimbursement to repair damages to public infrastructure from the State's Emergency Relief and Assistance Fund (ERAF). ERAF provides State funding to match Federal Public Assistance and eligible public costs are reimbursed at 75%. The State of Vermont will contribute an additional 7.5% toward the costs and for communities that take specific steps to reduce flood damage the State will contribute 12.5% or 17.5% of the total cost. Currently Woodbury is eligible for the 7.5% and with relative low effort could be eligible for 12.5% whereby lowering the town's financial responsibility.

Along with flood resilience, maintaining water quality is another consideration associated with the transportation system. Roadside erosion caused by stormwater runoff contributes to the conveyance of sediment and pollution into local waterways and beyond. With the passage of the Clean Water Act, municipalities now carry responsibility to lessen these impacts and adhere to the requirements of the States Municipal Road General Permit (MRGP). The MRGP's requirements include conducting an inventory of current road and culvert outfall conditions, and summarizing the findings. Having completed this Road Erosion Inventory in 2018, the Town will have until December 31, 2036 to implement upgrades to meet the MRGP standards. Managing the Permit requires additional local administrative capacity.

To aid local Road Crews, bridge and culverts are inventoried with assistance by the regional planning commission. The State maintains an online inventory at Vtculverts.org. This resource indicates that the two town bridges are in good condition and of the inventoried 423 culverts 37% are in good condition, 19% fair, 20% poor. Of the remainder, five are considered to be in "Critical" condition and the rest are classified as either "closed" or "unknown." This information can be updated each year and help direct local maintenance and repair efforts.


Map B: Rural Community Infrastructure
Woodbury Village Inset
Legend
Woodbury Stormwater Sites
Town Clerk's Office
Fire Station
Town Hall
Fire Dept. Annex/Food Shelf
Town Garage
Elementary School
Library
Structures
Swensen Granite Quarry
FEMA Buyout Parcel
Town Owned Parcels
Historic Village Districts
Lakes and ponds
Streams
Roads
State Highway
Town Highway Class 2-3
Town Highway Class 4
Private Road
Legal Trail
Miles
0 0.5 1 2
Map created May 2021 by CVRPC
N:\Towns\Woodbury\Projects 2021
\Woodbury Town Plan 2021
Data Sources
Roads: VTrans, 2019
E911 Points: E911, 2019
Data is only as accurate as its original source.
This map is for planning purposes only.
This map may contain errors and omissions.
CVRPC
ELMORE
CALAIS
HARDWICK
CABOT
Mud Pond
Buck Lake
Greenwood Lake
Valley Lake
Walton Pond
Slayton Pond
Dobson Pond
Wheeler Pond
Smith Pond
Cranberry Meadow Pond
Leech Pond
Nelson Pond
Sabin Pond
Nichols Pond
East Long Pond
Pickett Pond
Mud Pond
Little Mud Pond
CHURCH ST
CABOT RD
VALLEY LAKE RD
TH 14
TH 56
TH 62
TH 60

The town utilizes its Reserve Fund, Town Highway budget, AOT grants, and Federal and State assistance funds to manage its transportation network. The active granite quarry contributes to the local highway maintenance fund based upon the amount of material extracted which is transported on local roads. The local road system is the town's greatest expense. To leverage state and federal funding opportunities and assist in the annual budget process, a town may schedule expensive capital projects over the course of several years to even out costs.

Transportation Goal: Maintain Woodbury's roads to a high standard for safety, efficiency and environmental integrity and ensure bicyclists and pedestrians are accommodated particularly in the Village Centers and the Route 14 corridor.

Local and Regional Services & Facilities

Municipal Services and Facilities

Local Government and Administration The town provides municipal administrative services to its residents. The Town Office building houses the Town Clerk, the Auditors, Listers, Treasurer, Zoning Administrator and municipal meeting rooms. The Town Office building was formerly a neighborhood schoolhouse and is principally staffed by the Town Clerk and Town Treasurer, who are elected officials and responsible for managing and maintaining the town's finances; archives, including those related to real estate and private property transactions; vital statistics and town business. A lift was added to the exterior of the building to ensure the building is accessible to all citizens and no major improvements are needed in the near future. The Town Office building's meeting room is small and since the COVID 19 pandemic is not able to accommodate the space needs for public meetings and larger groups.

The annual town report includes a listing of other municipal officials and their respective compensation. Many people involved in municipal operations serve as volunteers and public participation is valued and welcomed. In recent years some new volunteers have been willing to serve on local boards and committees, however more would be welcomed in recognition of adding diversity and contributing additional non-partisan perspective.

Municipal revenues are generated primarily through levy of taxes on property value. Other major sources are Federal and State payments to support the town school, aid (including grants) from the Vermont Agency of Transportation and the Agency of Natural Resources for highways, and payments in lieu of taxes for land owned by the State of Vermont. Woodbury also receives reimbursement, based

on a percentage of extraction, from the Swenson Quarry for highway maintenance. The municipality also has the authority to incur debt through bonding.

Public, Educational and Recreational Services and Facilities In addition to use by the town Select Board and other committees, the **Town Hall** is available to community and private groups for a variety of activities. The Woodbury Town Hall, which was built in 1842, is among the oldest in the State, and may be the oldest Town Hall in continuous use without major structural changes. The building has been added to the national register of historic places. The building has sanitary facilities and running water, which are accessible during functions at the Town Hall. A covenant in the deed requires that the building be used for Town purposes at least once a year, or ownership reverts to its original owner or their assigns. The Hall is used at least once a year for various Town business related public forums and continues to be used as a polling place. A wheelchair ramp has been installed on the side of the front steps to ensure accessibility. The building will need a new roof and since the COVID pandemic, there is interest to make the town hall into a regular meeting hall for monthly municipal board and committee meetings, as well as social gatherings. This would require upgrades as the building is currently available for 3-season use.

Woodbury Town Hall

The Town maintains five **cemeteries**: (1) The West Woodbury Cemetery on West Woodbury Road; (2) The North Cemetery on Buck Lake Road; (3) The Center Cemetery on Cabot Road (near the village); (4) The Harvey Cemetery on Cabot Road (near the Cabot town line); and (5) The South Woodbury Cemetery on Route 14 in the south village. Additional land was recently purchased to expand the South Woodbury Cemetery; this should be adequate for the foreseeable future. A sixth unmarked cemetery near Woodbury Lake was recently discovered, although the Town does not own or maintain it.

Built in 1914, the Woodbury Graded **School** has been well maintained and is listed on the both the State and National Register of Historic Buildings. An elevator was installed in 1998, making the building's main floor and top floor handicapped accessible from the outside, but the basement offices and smaller

classrooms in the basement level are not handicapped accessible. The town leases the facility to the supervisory union for elementary school operations. The Friends of the Woodbury Elementary School is a non-profit group which supports educational opportunities and fosters ties between the school and the community. The town contributes funding to this group. The Elementary School currently has adequate classroom capacity, although as recently as 1990, overcrowding at the School necessitated building the one-room annex building. (Enrollment has fluctuated in recent decades from a high of 74 in 1997-98 to a low of 36 in 2011-12. Trends have evened out in recent years and enrollment is fairly stable with student numbers in the mid 50's.) It appears that the present space will be adequate for the next several years and recently the roof was re-shingled. The Woodbury Elementary School converted its heating system to a wood pellet system. It also underwent weatherization improvements that resulted in a higher-than-average energy efficiency rating. These improvements resulted in the school receiving an award for their achievement. The school and its educational and community contributions are a valued component of Woodbury.

The elementary school maintains a small gymnasium, a playground with varied apparatus and a vegetable garden with greenhouse. There is also a baseball field next to the elementary school on the school grounds. Woodbury has afterschool programs in basketball, soccer, skating and cross country skiing. In partnership with the Friends of the Woodbury Elementary School a community ice skating rink was created next to the school behind the Town Hall.

The Town **Library** was moved from the basement of the Town Office to a new addition to the school annex next to the Woodbury School. Today it functions as a Community Library, and also collaborates with the School in providing space and assistance for classes and after-school programs. It is overseen by a Board of Trustees and receives funding from the town. The facility functions much as a community center providing a range of programming and services. The library also serves as a handicapped accessible space for small public meetings.

Woodbury has a 65-acre **Town Forest**, which is located on Town Farm Road, near the village. The Town Forest was donated to the Town of Woodbury by the Hugo Meyer family in 1958 to be known as the "Harvey Drennan Town Forest." The intent of the gift was that the forest be held by the town as a timber forest with the income from the harvest of timber to be used for the benefit of the town. In 2018 the town participated in a collaborative project with Forest, Parks, and Recreation to develop a Recreation Plan for the forest. The plan also evaluated the Town Wetland Property which is located adjacent to the school property. The Recreation Plan identifies current conditions and lays out specific action steps for implementation. The Plan serves as a valuable resource for making these properties accessible for public enjoyment and to be used as an outdoor classroom for Elementary School children.

Despite the wealth of lakes and ponds in the town, there is no public swimming area for town residents. There has been ongoing discussion over several years about establishing a beach for public use. The 2000 town survey showed overwhelming support for a Town owned beach which was echoed in the 2020 Survey. Such a facility would be an outstanding resource for residents of all ages and collaboration with neighboring private property owners would be necessary to the process. (For additional information see; Outdoor Recreation section.)

Highway operations Woodbury manages and maintains the local highway system and owns a four-bay **highway garage** on a one-acre site on Dog Pond Road for equipment storage and maintenance. A Road Commissioner appointed by the Select Board and three full time truck driver/equipment operator(s) make up the road crew. The Town owns no gravel resources but has commercial sources available in Marshfield, Hardwick and Danville. Additional information about the transportation network is included in the Transportation section. The Town Garage site is currently not ideal for the current array of equipment and for storage of the winter sand supply.

Public Safety and Emergency Management The Town's fire coverage is provided by the Woodbury Volunteer Fire Department (WVFD), which is a member of Capital Fire Mutual Aid System. Woodbury provides mutual aid to the neighboring town of Calais. Hardwick Rescue provides ambulance service, and Woodbury First Response (part of the Woodbury Fire Department) provides additional medical care to Woodbury residents. Hardwick Rescue continues to provide CPR/AED and first aid classes for the community.
The fire station is located at 3665 Route 14 and an annex was built in 1992 to provide additional emergency response vehicle bays and storage space for the Department as well as for the First Response Team. Because of the numerous lakes and ponds in the area the Fire Department offers a well-trained water/ice rescue team with a rescue "air boat" which can be used on ice or water. Due to the complexities, increased hazards and expanding role in the modern era of emergency response, the Fire Department's needs have grown.

The Department has outgrown its current facilities and since 2014 the Department has been seeking to build a new fire station to meet its function needs. The 2015 Woodbury Community Planning Project recognized that a new/redeveloped fire station would be a significant community resource and summarized the basic needs and requirements for a new facility. In 2020 the fire department identified a location for a new facility but voters rejected a request to allow the fire department to issue a bond for $1,200,000 ($85,000 annually for 20 years.)

In 2018 WVFD responded to an increased number of building fires and at two of those buildings discovered the remains of two individuals who were victims of homicide. State police investigation reported the incident as a drug-related crime. The reality of the incident was summed up by the Woodbury Fire Chief in the 2018 town report in saying "I can't stress to you enough, that your fire rescue department is on the front lines of the opiate crisis." The WVFD is also faced with a low recruitment rate and are looking for new members. Fewer volunteers are expected to respond to increasingly challenging situations and conditions in the future.

The Fire Department currently has eight dry hydrants and the Woodbury Fire Chief has indicated that adding six more would better serve the town. In addition, a 10,000 gallon in-ground water storage tank located on the grounds of the Woodbury Elementary school serves as an alternative emergency water source. The department's ultimate goal is to place a sufficient number of dry hydrants at strategic locations to provide adequate fire control for the entire Town. When this is achieved, the Insurance Services Office (ISO) can then re-evaluate properties in Town, with the likelihood that insurance costs would be reduced due to reduced risk of damage from fire. The Department is also working through the ISO performance requirements, which will increase the likelihood of an upgrade in its ISO rating.

Ambulance services are provided by the Hardwick Emergency Rescue Squad and the Woodbury Fast Squad. The members of the Fast Squad are under the umbrella of Hardwick Rescue and, as such maintain on-call response status for medical emergencies in Woodbury as well as the whole of Hardwick Rescue's area of responsibility. They maintain their own equipment. The majority of their funds are raised from donations and volunteer activities. The State Police and Washington County Sheriff's Department provide public safety services to the Town. There is no emergency police service that provides a timely response to Woodbury and personnel for all policing departments in the area are currently understaffed.

The Elementary School serves as a Red Cross Emergency Shelter and a propane-powered generator was installed at the school in 1999. It is well maintained and capable of powering the school and the fire station in case of a major power outage. It has been used numerous times but most notably and extensively during tropical storm Irene in 2011. The town has recently been exploring the upgrade of this emergency generator.

Preparing for future hazards and mitigation to lessen the impacts is as important as response. As mentioned in the Natural Setting Chapter, the town recently received FEMA funds to buy out the old store and remove the building, as it caused obstruction to floodwaters. The next step on the process will be to further

reduce the potential of Village flooding by restoring the streambank. The Town's Local Hazard Mitigation Plan (LHMP) provides information on the town's current hazard controls and protective works; its top hazards; and list specific mitigation strategies. The information contained with the LHMP is recognized to be a component of this town plan and is incorporated into this plan by reference and implementation of its actions will help build resilience to identified hazards

Public water supply, wastewater treatment and stormwater management

The majority of development in Woodbury relies on private water supply and onsite sewage disposal. There is no municipal water or wastewater system. There are three public water systems in Woodbury: one serves the church and the Town Office in South Woodbury Village; one serves the Post Office, Town Hall and the Fire Station in Woodbury Village; Woodbury Elementary School has its own system. A preliminary inventory contained within the 2015 Village Study identifies the following:

- A shared well serves the Fire Department, the Town Hall and the Post Office building. The former Woodbury Village Store has an off-site spring and is shared by a couple private residents.
- The Fire Department and Post office buildings have separate leach fields in the area behind the post office. The town hall has a holding tank. The tank has to be pumped annually, and capacity is sufficient.
- The Town Clerk's office, located in South Woodbury, has a drilled well and a leach field. The well is shared with the South Woodbury Congregational Church.
- The Woodbury Elementary School has an off-site spring and an on-site sewage disposal system. The spring is under a public water system operating permit and is monitored every day.

The report also recognized that "while the town would benefit from a community wastewater disposal system, local funding is a concern" and recommended the town identify public water supply/wastewater infrastructure improvements needed for future infill development, including potential limitations.

As identified in the Transportation section, storm water runoff has negative impacts to water quality. Due to increasing desires to mitigate the impacts coupled with increased water quality regulations, the town partnered with state and regional partners to undertake a storm water master planning process. The outcome was the identification of sites where **stormwater treatment** techniques could be installed that would provide the greatest water quality benefit and have a high likelihood of implementation. Four projects are currently in the final design phase. Upon completion, the town will be responsible for operation and maintenance of these sites, to ensure they continue to effectively manage stormwater run-off according to best management practices. It should be noted that implementation funds have not been identified to date.

Solid Waste Woodbury is a member of the Central Vermont Solid Waste Management District (CVSWMD). The District is responsible for the development and implementation of a solid waste plan that complies with the State solid waste plan. The District sets charges for haulers. Recyclables are hauled to a materials recovery facility and trash is taken to a district designated, lined landfill located elsewhere. Woodbury businesses and residents have the option of having their trash picked up "curbside." There are also solid waste transfer stations where one can bring household trash and recycling in Hardwick or East Montpelier. Collection of junk cars, littering and trash disposal costs have been identified as a community concern in the 2020 survey. Adoption of local ordinances and community programs could be instituted to address these concerns.

Health and Human Services Services for Woodbury's youth, seniors, disabled, sick and less fortunate are provided by the following regional agencies and entities: Washington County Youth Services Bureau, the Central Vermont Council on Aging, Retired Seniors Volunteers Program, Vermont Center for Independent Living, Central Vermont Home Health Agency, Battered Women's Services, Sexual Assault Crisis Team of Washington County, Inc., Aid to Women in Abuse and Rape Emergencies (Hardwick), The Shelter Committee, Inc., the Central Vermont Community Action Council, Washington County Mental Health Services, and Patch. Financial support for these organizations has been approved for many years at Woodbury's Town Meeting.

Woodbury residents are also served by the Copley Hospital and the Lamoille Home Health and Hospice in Morrisville, the Central Vermont Medical Center and Central Vermont Home Health Agency in Berlin, the Health Center in Hardwick and the Health Center in Plainfield. Support of public transit options as identified in the Transportation section will ensure continued access to basic essential services for all residents of Woodbury.

Municipal and Regional Facilities and Services Goal: Maintain town-owned facilities and provide for basic public services, which are cost-effective, hazard resilient, and efficient while seeking opportunities to make improvements.

Telecommunications & Broadband Connectivity

As a rural community with mountainous terrain broadband and mobile voice and data services are not broadly accessible to most residents in Woodbury. These services are in increasing demand for business, employment and education; interpersonal communication and entertainment; plus access to essential services such as telehealth and public safety. The Local Hazard Mitigation Plan (LHMP) identified lack of service as an obstacle in the public's ability to report

emergencies and the town's ability to more effectively coordinate response activities. Demand has been amplified by the recent pandemic.

There is currently one telecommunications tower in Woodbury, located on Robinson Mountain. The construction of such infrastructure to expand coverage can be controversial as recently experienced in neighboring Hardwick. The proposal to build on a prominent hillside was met by local opposition. Balancing these diverging needs of increased coverage with siting concerns are ultimately the responsibility of the Public Utility Commission but the town is granted party status in the proceeding. Variations in deployment strategies to increase coverage could be employed as specified in the State's just-issued draft 10-year Telecommunication Plan. Recommendations contained within identify a State-led process to investigate impact and viability to increasing coverage in underserved areas. During the development of the LHMP it was suggested a cell tower be installed on a church steeple or at the active quarry. Co-locating telecommunications infrastructure with existing buildings and developed sites can help lessen the environmental and visual impacts of new technologies.

In 2015, the Federal Communication Commission (FCC) set the current benchmark for broadband internet speed at 25 Megabits per second (Mbps) download, and 3 Mbps upload and is considered "high speed internet". Subsequently, the Vermont Public Service Board adopted the FCC standard. A speed of 100/100 is considered "very high speed internet" and is the goal internet service providers are striving for. After a year of pandemic induced lockdowns, in order to support multiple family members at home with work, schoolwork, online meetings, telemedicine and gaming, the need for fast broadband speed is only going to grow even in a post-pandemic future.

A Broad Band Now 2021 study ranked Vermont 47th in the nation for the strength of its broadband systems ahead of only Nebraska, New Mexico, Montana, and Alaska. An additional study by Broad Band Now 2021 indicates 182,000 Vermonters do not have access to terrestrial broadband service.

Based upon 2019 date provided by the Vermont Department of Public Service, almost 90% of buildings in Woodbury have access to the internet, about 49% has access to high-speed internet and no buildings have access to very high internet access. Residences along the Route 14 corridor have access to high-speed internet. However, high-speed internet access remains dependent on the service provider and technical nuances based on the internet service offerings. Those residences outside of the Route 14 corridor utilize satellite or digital subscriber line (DSL) technologies for internet access. Internet access speed for these service offerings typically are 4 Mbps download and 1 Mbps upload and fall well outside the FCC's "high-speed" internet benchmark. The town has two identified wi-fi hot

spots- one at the Town Office on Route 14 and one at the Woodbury Elementary School. The community library provides public internet access.

The State has a goal to of providing 100/100 Mbps service everywhere in Vermont. The above referenced State plan also provides recommendations towards expanding high speed internet to rural communities, primarily through the formation of Communication Union Districts (CUDs.) Central Vermont Internet (CVFiber) is a Communication Union District representing twenty Central Vermont communities including Woodbury. CVFiber's mission is to ensure everyone in its member towns has access to internet speeds of at least 100 Mbps (megabits per second) for both uploading and downloading data. By bringing together densely populated neighborhoods with rural communities the CUD can leverage its combined membership to make infrastructure improvements economically feasible to a private contractor/provider.

Telecommunications & Broadband Connectivity Goal: Increase cell and broadband coverage for social, economic, educational and emergency service needs.

Energy

Energy is necessary to power homes and businesses and modes of transport. The majority of Woodbury households heat their homes with wood (58%) followed by propane (20%) and fuel oil (15%). The Hardwick Electric Department supplies electricity to most of the Town and Washington Electric Cooperative supplies some customers in the southeastern and northeastern portion of the town.

The 2016 Vermont Comprehensive Energy Plan (CEP) outlined ambitious goals to achieve 90% of Vermont total energy needs from renewable energy sources by 2050. The benefits of taking on this challenge will help combat the negative impacts of climate change, increase energy security, and reduce total energy cost while also improving the economy. Reaching this goal will require all entities in the State's energy network to aim for:

- Energy conservation & efficient use of energy;
- Reducing transportation demand and single occupancy vehicle trips, and encouraging the use of renewable sources for transportation;
- Promoting patterns and densities of land use likely to result in conservation of energy;
- Siting of new renewable energy generation.

Woodbury recognizes the validity of these strategies for the benefits they will provide for local residents and as such has developed a targeted energy plan to identify pathways toward implementing these strategies. Included as an attachment and incorporated into this plan by reference, Woodbury's Energy Plan

serves to provide the town with greater standing during the State's permitting process for new energy generation facilities. Woodbury's Energy Plan, includes the following information:

- estimates current energy use across transportation, heating, and electric sectors
- establishes 2025, 2035, and 2050 targets for thermal and electric efficiency improvements, and use of renewable energy for transportation, heating, and electricity
- evaluates the amount of thermal-sector conservation, efficiency, and conversion to alternative heating fuels needed to achieve these targets
- evaluates transportation system changes and land use strategies needed to achieve these targets
- evaluate electric-sector conservation and efficiency needed to achieve these targets

The Plan recognizes that energy efficiency is commonly viewed as the most effective and lowest-cost option for reducing energy consumption for electricity, heat, and transportation. Energy efficiency and conservation efforts such as improved insulation and weatherization of new and existing structures; improvements in building design; and the use of high-efficiency vehicles often have a dramatic impact on reducing fuel consumption. It also notes that the town is significantly forested, and recognizes the importance of supporting the local logging businesses and regional economy and for that reason suggests an increased emphasis be given to encouraging new efficient Wood Heat Systems.

One component of reducing fossil fuel-based energy used in the transportation sector is to convert or replace older vehicles with alternative fuel vehicles such as electric or biodiesel and encourage local charging stations. Another consideration is to reduce the total number of vehicles overall. This can be done through the creation of compact development patterns, increased transit opportunities, or alternative transportation options such as carpooling, ridesharing and encouragement of bicycling or walking. Evaluation of additional objectives that promote a shift away from vehicle use rather than rely on the conversion of vehicles to renewable fuels may be worth pursuing.

➲ The Woodbury Enhanced Energy Plan and associated maps are incorporated into this plan by reference and can be found at the within the Appendix.

Advances in technology have improved solar efficiency and solar arrays are becoming more affordable. Woodbury has made great strides to incorporate solar energy into its energy portfolio. Several south-facing roofs and slopes provide the potential for even greater use of the technology, although some roofs may need to be retro-fitted to support solar panels. A majority of

Woodbury residents are served by Hardwick Electric Department, HED, which has expressed the problem of grid constraints being able to handle solar electricity being fed onto the grid. As such, HED has imposed limits on how much solar the utility is willing to allow to connect to the grid through net-metering. This forced constraint greatly limits Woodbury's ability to achieve the State's 2050 renewable energy goals.

An analysis of existing land and renewable resource potential was undertaken to help determine the amount of local renewable energy that could be developed within the Town of Woodbury. There is adequate land area available for Woodbury to accommodate renewable energy generation that can meet the town's share of the region's renewable energy allocation. It should be noted, however, that not all renewable energy generation is appropriate at the same scale. Based upon mapped "Known" and "Possible" constraints smaller-scale and residential scale renewable energy development is more feasible.

Following the adoption of this plan, the next step in Woodbury's energy planning process will entail consideration of identifying locally designated preferred sites, local constraints and/or unsuitable areas for renewable energy facility siting along with the establishment of clear and specific guidelines that can be used when evaluating proposed large-scale projects. It should be noted that the State has already identified the following as preferred sites: rooftops (and other structures), parking lots, previously developed sites, brownfields, and gravel pits/quarries. These sites will automatically be eligible for financial incentives to encourage development of new renewable energy facilities. At this time, if a renewable energy developer wishes to seek Preferred Site Designation for a property not in the State's list, the Woodbury Planning Commission, Selectboard and Regional Planning Commission must all submit a letter agreeing the alternative site is deemed preferred. Identifying local preferred sites or developing a set of criteria will provide the town with increased deference in the State's permit approval process.

Energy Goal: To increase energy efficiency and energy conservation while supporting the transition to renewable energy sources.

Mapping out the Future

Woodbury's natural setting has and will continue to influence settlement patterns and land use. The high elevations and steep slopes of the Woodbury Range have limited development in the northwest quadrant of town. Decent agricultural soils in the south, southeast, and farthest northwest corner made establishment of farmsteads feasible.

The abundance of wetlands, lakes and ponds in central and south central Woodbury have attracted residents, even Woodbury's earliest inhabitants. South Woodbury Village was the first organized settlement characterized by a cluster of homes and small scale commerce and industry centered on water power. With the expansion of quarrying to the north, Woodbury Village eclipsed South Woodbury Village as the main hub of commerce and community life. Over time Woodbury has retained much of its rural character, however the vitality of villages has decreased and unplanned development has the potential to negatively impact those places and qualities which residents most value. Woodbury may attract more residents as high speed internet becomes universal and working from home becomes more common, making land use planning even more important.

Planning for economic development, housing needs, infrastructure, and environmental health are fundamental responsibilities of Vermont's municipalities. Woodbury recognizes that land use decisions are often personal and private matters for landowners. The Town Plan acknowledges this and does not aim to infringe upon the rights of property owners. Together the following Future Land Use Plan and Implementation Program proposes a pathway to achieve the plan's vision and stated goals.

Current Land Use and Existing Zoning Regulations

Zoning was first adopted in Woodbury in 1973, in response to concerns with an influx of hippies building shacks and cabins in the woods. The ordinance was revised in 1982 and again in 1989 with a minor amendment in 2006. Land use regulations (otherwise known as Zoning and Subdivision Regulations) are considered to be a regulatory tool to aid in the effective implementation of the town plan. Towns may also identify non-regulatory strategies to help accomplish the town's goals. Towns are only enabled to adopt, update or amend local zoning regulations if the town has an effective, locally adopted town plan in place.

Permits are required for land development, defined to include subdivision, construction, re-construction, conversion, structural alteration, relocation or enlargement of any building, mining, excavation or landfill, and any change in the use of any building, structure, or land.

Three zoning districts are designated – The Shoreland District surrounds lakes and ponds larger than 20 acres, and covers an area 800 feet deep from the shoreline. The minimum size for a new lot is one acre. Permitted uses are single-family residences and limited types of compatible commercial uses.

There are two Village Zoning Districts: South Woodbury and Woodbury Village. Minimum size for a new lot is one acre. Residential, public buildings and commercial uses are allowed, some needing conditional use review and permitting. The majority of the town is currently classified as "Agriculture – Rural Residential" Minimum size for a new lot is 3 acres, and only residential uses and home occupations are allowed. Commercial uses other than home occupations are not allowed. Required setbacks are the same for all districts – 100 feet from any shoreline, stream or wetland, and 25 feet from side or rear property lines. Road center line setbacks are 65' from town highways, 25 feet from private roads, and 75' from Route 14.

In the last eight years, an average of 31 permits were issued each year, with two or three permits for new dwellings in most years. Sheds, decks, porches and garages constitute the bulk of new construction. With very few exceptions, permits are granted and complied with. Voluntary compliance cures most violations. It is seldom that zoning results in enforcement challenges, and those are often caused by neighbor disputes, rather than land development concerns. Zoning is generally accepted as a way to insure that landowners are treated fairly and their property values can be preserved by preventing unsavory or unlawful land uses by others.

An update to this ordinance is warranted once this plan is adopted, to bring it into compliance with state regulations and to allow the town to continue to develop in a manner that respects the environment as well as property values.

Future Land Use

Identifying future land use districts communicates important components of Woodbury's vision for investment and preservation. The following land use districts do not necessarily reflect current uses of land but rather the uses desired within the planning time frame. It is a prescription for future growth and a guide for managing land use change.

The Future Land Use Districts are not zoning districts, but do establish the legal basis for the adoption or amendment of a zoning map and related regulations. It does not entitle property owners with additional rights nor does it take any property rights away. The land use classifications are intended to be broad and conceptual, reflecting only general land uses. The town plan establishes the rationale and intent to guide subsequent zoning amendments which may be

necessary to achieve the presented vision and goals and it may result in the need to adopt multiple zoning districts within each land use category to address the more site-specific conditions.

Future Land Use Districts

Center Village District Primary purpose of the District is to encourage a mix of uses which maintain and preserve the integrity of the historic settlement pattern. The District is characterized by a high concentration of historic buildings and public uses all within a walkable distance. Principal uses and activities will include a mix of residential, home occupations, small scale commercial, community and civic uses. Village Center Designation will be sought to help direct historic preservation and community development efforts. Municipal infrastructure investments will be prioritized for the Village along with increasing bicycle and pedestrian amenities and streetscape improvements. The District will have a highest allowable density compared to the rest of the town.

South Village District Primary purpose of the District is to encourage a mix of uses which maintain and preserve the integrity of the historic settlement pattern. The District is characterized by a high concentration of historic buildings. Principal uses and activities will include a mix of residential, smaller scale-commercial (compared to Woodbury Village), community and civic uses all within a walkable distance. Village Center Designation will be sought to help direct historic preservation and community development efforts. The District will have a lower allowable density compared to Woodbury Village.

Lakeshore Residential District Primary purpose of the district is to protect water quality and enhance the quality of shorelines on lakes 10 acres and greater. The District is characterized by a high concentration of lake-side residential properties. Principal uses and activities will include residential development and home occupations. The District will have a high to medium allowable density, compared to the rest of the town.

Village Neighborhood Primary purpose of the district is to encourage a diversity of housing choices to promote neighborhood style housing which could include clustered housing and different types of housing for seniors that are in proximity to the Village Centers. The District is a transitional zone between the historic commercial centers and the rural areas. Principal use and activities will include residential development and home occupations.

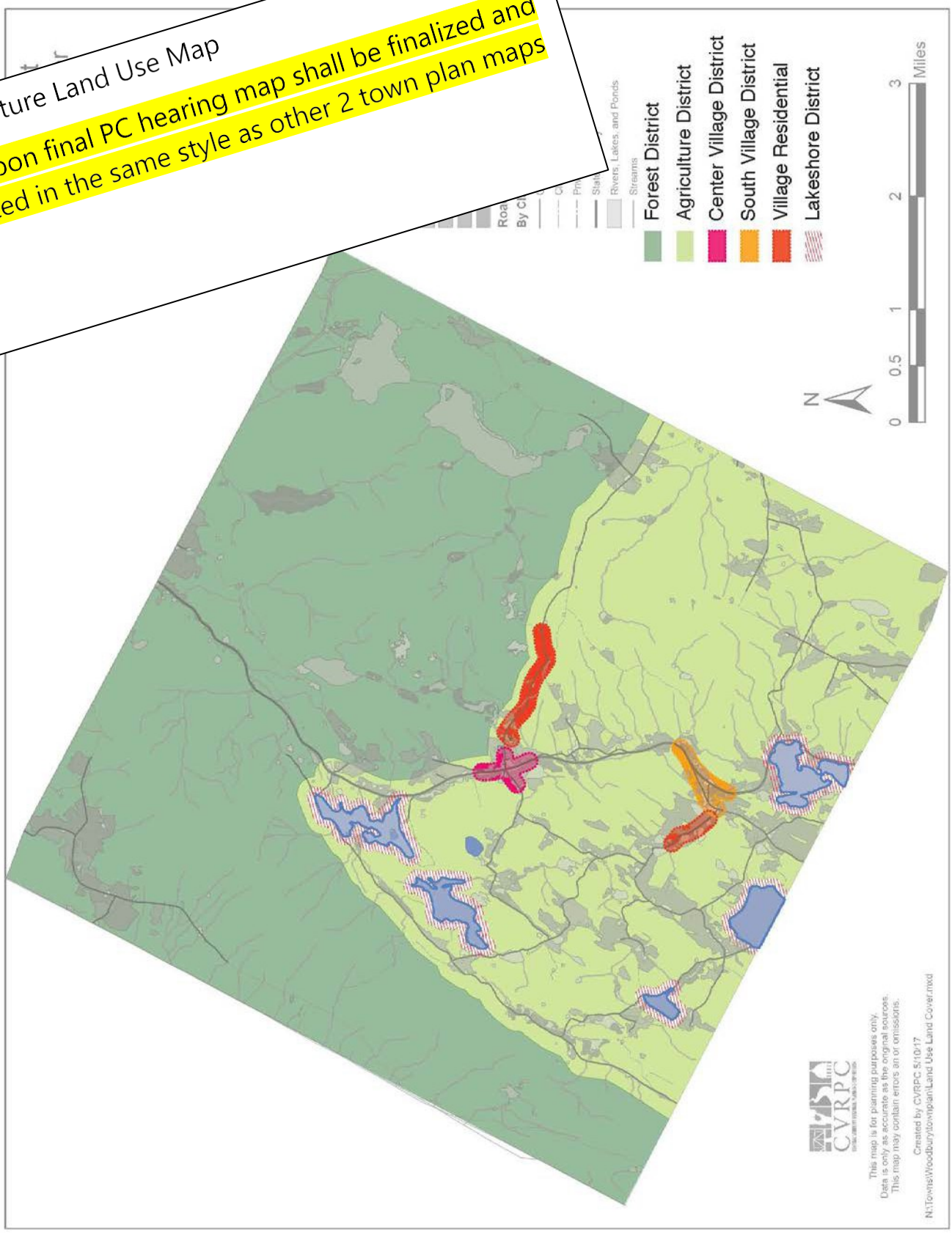
Survey Responses:
47% of respondents were in favor of the development of a "conservation reserve zone" for areas of Woodbury with larger parcels, and provided input focusing on northern sections of town.
50% of respondents believe some open space should be conserved for future agricultural use.
74% of respondents were in favor of preserving scenic, historic, or natural areas in Woodbury.

Agriculture District Primary purpose of the district is to encourage agriculture, forest-based operations and low density residential development. The District is characterized by large tracts of historic agricultural working lands. Principal uses and activities will include land-based operations, residential development, home occupations and small scale commercial enterprise. The District will have a medium allowable density, compared to the rest of the town.

Forest District Primary purpose of the District is to maintain priority forest blocks, wildlife connectivity and preserve undeveloped ridgelines over 2,000ft. The District is characterized by large un-fragmented forests and woodlands. Principal uses and activities will include land-based operations such as forestry, agriculture and resource extraction. Limited clustered residential uses will be allowed along with home occupations. The District will have the lowest allowable density, compared to the rest of the town, and land conservation and outdoor recreation uses will be highly encouraged.

DRAFT Future Land Use Map

Note: Upon final PC hearing map shall be finalized and formatted in the same style as other 2 town plan maps



Implementation Program

These goals, objectives, and actions contained below make up the implementation program for Woodbury's Town Plan. The actions contained within are to be initiated by the Town. However, the successful implementation ofthe goals, outlined below depend on the combined efforts of Town residents, property owners and local officials, as well as the resources of the Central Vermont Regional Planning Commission (CVRPC), and other regional, state, federal and private entities involved in land use planning activities.

- Goals: State a clear purpose and destination, and articulate an overarching principle that guides decision-making, they are intended to be both challenging and attainable.
- Objectives: Provide targets for the accomplishment of goals. They should be specific enough that the Municipality can determine when the objectives have been met.
- Action: The next steps needed to move toward the objectives. These are concrete activities that can be described in specific terms.
- Responsible Party: The lead municipal board responsible for undertaking the identified Action.
- Time Frame: Identifies the timeframe in which to accomplish the Action:
    - ST: Short Term:1-4 Years
    - MT: Midterm: 5-8 Years;
    - OG: Ongoing: Indefinite
- Possible Partners: Lists local, regional and/or State entities who can assist Responsible Party in undertaking the Action

Responsible Party Acronyms:
PC: Planning Commission
CC: Conservation Commission:
ZA: Zoning Administrator
FWES: Friends of the Woodbury Elementary School
OSUESD: Orleans Southwest Union Elementary School District
ANR: Vermont Agency of Natural Resources
DHCD: Vermont Department of Housing and Community Development
DEC: Vermont Department of Environmental Conservation
FW: Vermont Department of Fish and Wildlife
FPR: Vermont Department of Forests, Parks, and Recreation
DHP: Vermont Division for Historic Preservation

Natural Setting

Natural Features and Ecological Systems Goal: Protect and conserve Woodbury's forests, lakes, ponds, and wetlands to maintain and improve ecological functions.

Objective	Action	Responsible Party	Time frame	Possible partners
A. Maintain and improve ecological integrity of Highest Priority Interior forest blocks and the habitat connectors between them by minimizing fragmentation and improving management.	i. Include measures in revised Zoning Ordinance to protect forest blocks and habitat connectors from fragmentation and degradation which may include standards that limit direct development at the edge of identified blocks, limit allowable driveway and road length and include provisions for forest management and silvicultural access.	PC; CC; ZA	ST Initially; OG	FW; FPR; Land Trusts;
	ii. Educate forest owners and other town residents about the ecological importance of forest blocks and habitat connectors and encourage maintenance of these resources.	CC	ST Initially; OG	FW; FPR; Land Trusts
B. Maintain and improve, water quality and protect shorelines of lakes, ponds, and brooks.	iii. Educate lakeshore landowners about State Shoreline Protection Act provisions and encourage compliance.	PC; ZA	ST	ANR; CVRPC;
	iv. Include provisions in the revised Zoning Ordinance to protect shorelines, including provisions of the Shoreline Protection Act.	PC; ZA	ST	ANR; ZA; Lake Assoc; CVRPC
	v. Ensure that each of the following lakes have volunteer water quality monitors and invasive aquatic weed patrollers: Woodbury; Greenwood; Nelson; East Long; Nichols; Valley; and Buck.	PC; CC	OG	DEC Lakes and Ponds Program-; Lake Assoc
	vi. Apply for a grant to fund Lake Watershed Action Plans and Lake Wise Program projects for	PC; CC	ST	Greenwood & Woodbury Lake Assoc

	Greenwood and Woodbury Lake and other lakes as needed.			
C. Protect wetlands, floodplains and riparian areas and rare habitat from disturbance.	vii. Include protection of these areas in the revised Zoning Ordinance	SB; PC; CC; ZA	OG	ANR DEC
Working Lands Goal: Strengthen and promote the long-term viability of working lands that are committed to sound management practices and contribute to the local economy.				
Objective	**Action**	**Responsible Party**	**Time frame**	**Possible partners**
D. Support and protect agriculture and forestry based businesses and activities.	i. Partner with property owners who seek to preserve or conserve agricultural or forestlands.	PC; CC	OG	Land Owners; Forestry Businesses; Tree Warden; County Forester; FPR; Farmers
	ii. Ensure revised Zoning Ordinance does not present any barriers to operations that comply with State regulations.	PC; ZA	OG	CVRPC; VLCT
E. Support the siting, expansion, operation and reclamation of resource extraction activities that minimizes adverse impact to neighbor properties and municipal infrastructure.	iii. Include provisions in the revised Zoning Ordinance which provide clear guidance in the local permitting process.	PC; ZA	ST	CVRPC; VLCT
	iv. Maintain communication with the active quarry operators to learn about operational changes.	SB; PC	OG	ANR/Act 250; Swenson Quarry Personnel
Scenic Areas Goal: Protect and maintain significant scenic areas and views.				

Objective	Action	Responsible Party	Time frame	Possible partners
F. Identify and designate significant scenic areas and views and prioritize their protection.	v. Undertake a scenic resources inventory and map for Woodbury and identify specific strategies for protection.	PC	ST	ANR; CVRPC
Outdoor Recreation Goal: Increase recreational opportunities afforded by Woodbury's natural setting for residents and non-residents.				
Objective	Action	Responsible Party	Time frame	Possible partners
G. Establish town beach on one of the lakes to provide a public swimming area.	vi. Form a committee and undertake a feasibility study to recommend possible sites and funding sources.	SB; PC	OG	Lake Assoc
	vii. Determine feasibility for residents to use Buck Lake beach when the Conservation Camp is not in session.	SB; PC	OG	FW; State Reps & Senators
H. Expand hiking, biking, skiing, snowshoeing and off road motorsport opportunities on public and private lands.	viii. Prepare a public recreation map for Woodbury and include bicycle touring routes on Woodbury's back roads and identify Class 3 Roads with points of interest.	PC; CC	ST	VAST; CVRPC; Trail Advocacy Group; FPR
	ix. Form a committee to recommend possible sites for a winter trail system in town for hiking, snowshoeing, x-country skiing, snow mobiling (Example: Hardwick Trails) and to expand the trail system including on private land (such as a Trans-Woodbury Trail) and seek owner permission.	PC; CC	ST	VAST; CVRPC; Trail Advocacy Group; FPR
	x. Form a committee to ensure access to Class 4 roads and trails on public and private lands for off road motorsports.			VASA; VAST; CVRPC; Trail Advocacy Group; FPR

I. Maintain and improve town recreation facilities including the town forest, baseball field at school, and ice rink.	xi. Complete trail in the Town Forest and implement the Action plan contained within the Woodbury Town Forest Recreation Plan.	SB; CC; FWES	ST, MT and OG	OSUESD
	xii. Establish outdoor classroom shelter at the Woodbury Elementary School and Assist in the installation and funding of a teaching platform in the school wetlands.	SB; CC; FWES	ST	OSUESD
	xiii. Enhance the public skating rink by installing a roof over the ice surface.	SB; FWES	MT	OSUESD

Sense of Community

Historic and Cultural Resources Goal: Protect and preserve important historic and cultural resources and make information about these resources available.

Objective	Action	Responsible Party	Time frame	Possible partners
A. Make current listing of historic resources available to aid in local protection efforts.	i. Update State's Historic Sites and Structures Survey.	PC	ST	Woodbury Historical Society; CVRPC; VDHP
	ii. Raise awareness and interest of historic resources by the listing of historic resources available on the town website; hold public educational events, such as talks and tours.	PC	ST	Community Library Talks; WEB Master; Woodbury Historical Society; VDHP
B. Incentivize the preservation of historic resources.	iii. Apply for Village Center Designation for the villages to make financial and technical assistance available	PC	ST	DHCD; CVRPC

	to historic, commercial and public buildings, including the school and town hall.			
C. Permanently preserve documents of the Historical Society's collection.	iv. Apply for grant to digitize historical documents and photos.	SB; Historical Society	MT	VDHP; VT Secretary of State; VT Folklore Society
Housing Goal: Increase the diversity of housing options to meet the needs of a wide range of income levels and preferences.				
Objective	**Action**	**Responsible Party**	**Time frame**	**Possible partners**
D. Increase awareness and understanding of housing needs for Woodbury residents.	v. Undertake a detailed housing needs assessment to define specific housing gaps, starting with a public survey	PC	OG	CVRPC; Census Bureau; Listers
	vi. Research Vermont housing assistance organizations and develop partnerships with housing development organizations.	PC	OG	Downstreet Housing; Lamoille Housing Partnership
E. Incentivize housing development to fill market gaps, especially for lower income residents.	vii. Include provision in the revised Zoning Ordinance to allow for multi-unit dwellings to be built or created in existing structures, in the villages and other areas as allowed by the revised Zoning Ordinance	PC; ZA; SB	OG	CVRPC; VLCT
	viii. Revise Zoning Ordinance and eliminate any legal barriers to accessory structures.	PC; ZA	OG	ZBA; VLCT; CVRPC
	ix. Inventory buildings and sites that are located in proximity to the village areas that may be repurposed for multi-unit or elderly housing.	PC	MT	Historical Society

Local Economy Goal: Support the viability of local businesses, and increase access to employment, training and educational opportunities in Woodbury by encouraging provision of services.				
Objective	**Action**	**Responsible Party**	**Timeframe**	**Possible partners**
F. Make high speed internet connections available to all Woodbury homes and businesses to fulfill a basic requirement of modern life, commerce, and educational access.	x. Continue support of and maintain a town representative on the regional Consolidated Union District-CV Fiber or other contractor(s) in the deployment of high-speed broadband connectivity.	SB; PC	ST & MT	CV Fiber; Hardwick Electric Department; CVRPC; Vermont Community Broadband Board
G. Encourage and support home-based businesses and workers and students and reduced commuting by existing residents.	xi. Allow for the creation of a public workspace in a town-owned building with high-speed internet connections for remote workers and students to use during the day.	SB; PC	ST	CV Fiber; OSEUSD; Woodbury Library Trustees
	xii. Facilitate the formation of a group of home business owners and workers to provide networking opportunities for mutual support.	PC; local business owners	ST & OG	CVEDC; CVCOC
	xiii. Ensure a provision in the revised Zoning Ordinance allow for home-based businesses.	PC; ZA	ST	CVEDC; VLCT; CVRPC
H. Facilitate the creation of a childcare facility in town.	xiv. Make space available in a town owned building for a daycare center.	SB	ST	OSUESD
	xv. Support parents to form a group to formulate a plan to address childcare needs.	SB	ST	Parents; FWES
	xvi. Apply for a grant to start a daycare center.	SB	ST	Department of Children and Families

I. Develop a targeted Economic Development Strategy for Woodbury to identify opportunities for new and expanded businesses and consider coordinated marketing and promotional initiatives.	xvii.	Seek funding to hire a consultant to lead the development of the Economic Development Strategy which identifies short and long-term strategies and engage the community to get ideas.	PC	ST	CVRPC; ACCD; CVCOC; CVEDC
Community Development Goal: Increase the vitality of our village centers, South Woodbury and Woodbury Village, to benefit the existing community and attract new residents.					
Objective	**Action**		**Responsible Party**	**Time frame**	**Possible partners**
J. Incentivize historic preservation and economic development in the Village centers.	xviii.	Apply for Village Center Designation for Woodbury Village and South Woodbury Village, which makes financial and technical assistance available for historic preservation and economic development.	SB; PC; ZA	ST	CVRPC; DHCD
K. Allow for new small scale commercial activity and mixed uses in Village areas which is compatible with the existing character and respects ecologically sensitive areas.	xix.	Include provision in the revised Zoning Ordinance to provide for utilization of open space or existing structures (infill) based upon recommendations with the Woodbury Village Planning Study and consider similar provisions for South Woodbury.	SB; PC; ZA	ST	CVRPC; ACCD; League of Cities and Towns

L. Make necessary improvements to water and sewer infrastructure in Woodbury Village to accommodate increased public usage of the town hall and establishment of new businesses such as a store, café or restaurant.	xx. Seek grant funds to conduct a detailed study to identify future water supply and wastewater options and related implementation budget based upon the recommendations from the Woodbury Village Planning Study.	SB; PC	ST	VTrans; CVRPC; ANR
M. Facilitate the creation and use of public and/or commercial gathering places.	xxi. Create or use the existing green space(s) in the Village to host events such as a farmer's market, community events and picnicking.	SB; PC	OG	Local Farmers; Historical Society; Local Citizen Groups.
	xxii. Create a committee to lead this effort and seek funding to support/encourage the opening of a store or café.	SB; PC; ZA	OG	Washington County Chamber of Commerce
	xxiii. Maintain public meeting places in town owned buildings that are open at regular times and for special community events.	SB	OG	OSUESD; Town Clerk; Special Events Organizers

Rural Services and Infrastructure

Transportation Goal: Maintain all Woodbury's roads to high standard for safety, efficiency and environmental integrity and ensure bicyclists' and pedestrians' safety are accounted for, particularly in the Village Centers and the Route 14 corridor.

Objective	Action	Responsible Party	Time frame	Possible partners
A. Maintain and improve the safety of the road system.	i. Analyze locally collected road traffic data and more detailed VTrans and CVRPC data to identify areas of specific concern.	PC	OG	CVRPC, VTrans
B. Maintain and improve the town road system for increased water quality and flood resilience	ii. Continue to participate in the Municipal General Roads Permit (MGRP) program to ensure road system improvements.	SB; Road Commissioner	ST & OG	VTrans; Better Roads Program; Municipal General Roads Permit Program; CVRPC
	iii. Implement the transportation related mitigation actions identified in the Local Hazard Mitigation Plan.	SB; PC; Road Commissioner	OG	CVRPC; DHCD; VTrans
C. Establish bicycle and pedestrian facilities in the Village Centers and connecting to other prominent locations in town (e.g. South Woodbury, town forest, Woodbury Lake)	iv. Seek grant funds to undertake a scoping study to further streetscaping recommendations presented in the Woodbury Village Planning Study and include considerations for Restriping RT 14 with bike lanes, incorporation of informational kiosk and other bike and pedestrian infrastructure.	SB; ; Road Commissioner	ST & OG	VTrans; Bicycle Groups; CVRPC, Local Motion
D. Ensure public transit options are available to Woodbury residents:	v. Incorporate the following related actions from the Energy Plan:	SB; PC	ST & OG	RCT; VTrans; Green Mountain Transit

	1. Identify challenges and opportunities for small-scale transit in Woodbury. 2. Explore alternative public transportation that Woodbury may be able to take advantage of beyond the current service from Rural Community Transportation. 3. Identify possible locations for a formal park-and-ride lot in Woodbury.			
Municipal and Regional Facilities and Services Goal: Maintain town-owned facilities and provide for basic public services, which are cost-effective, hazard resilient, and efficient while seeking opportunities to make improvements.				
Objective	**Action**	**Responsible Party**	**Time frame**	**Possible partners**
E. Plan municipal investments and expenditures that limit budget and tax rate fluctuations.	vi. Sustain annual funding to the Town Building Fund and develop a Capital Improvement Program to identify large expenditures, possible sources of revenue that spreads out costs over 5 to 10 years.	SB	OG	VLCT; CVRPC
F. Maintain and improve town-owned buildings.	vii. Apply for funds to upgrade the town hall for year-round occupancy.	SB	OG	ACCD; VCDP; Efficiency Vermont
	viii. Perform energy audits on all town owned buildings and plan for recommended upgrades and improvements.	SB	ST	Efficiency Vermont; Ad Hoc Committee

	ix.	Identify necessary long-term improvements to the Town Garage.	SB	ST	Efficiency Vermont ; ACCD (VCDP); Ad Hoc Committee
G. Manage storm water mitigation systems in locations deemed feasible.	x.	Implement the recommendations of the Stormwater Management Plan.	PC; SB; Road Commissioner	OG	CVRPC; ANR; VTrans
H. Continue to provide public safety and emergency services.	xi.	Continue funding the operations of the Woodbury Volunteer Fire Department for fire protection and its local initial medical emergency response team (FAST team) and Hardwick Rescue for emergency medical response by trained local volunteers using well-maintained equipment.	SB	OG	Hardwick Rescue; Woodbury Volunteer Fire Department
	xii.	Provide police protection on a contractual basis.	SB	OG	Various law enforcement agencies
	xiii.	Maintain the Local Hazard Mitigation Plan (LHMP) and implement the Actions.	SB		
I. Collaborate with the OSUESD to keep Woodbury School functioning as a school and community hub.	xiv.	Encourage community involvement with and support of the school through Friends of the Woodbury Elementary School.	SB; PC; CC	OG	OSUESD; Woodbury School Board Rep.
	xv.	Support strengthening the natural science curriculum and outdoor education program to increase the educational value and viability of the school.	CC; School Principal	OG	FWES; FW; Four Winds Nature Institute; North Branch Nature Center

J. Maintain the Woodbury Community Library as an important community resource.	xvi. Support the library trustees to develop and implement a new long-range plan for the library.	SB	OG	Vermont Department of Libraries
K. Work collaboratively with property owners to ensure appropriate management and disposal of unregistered and unlicensed vehicles and roadside dumping.	xvii. Evaluate adoption of a "Junk" Ordinance or a Zoning enforcement provision to manage collection of unregistered and unlicensed vehicles and other materials deemed as "junk".	SB; PC; ZA; ZBA	OG	VLCT; ANR; DEC Enforcement Division
	xviii. Seek volunteers to participate in Local Green-Up Day activities.	CC	OG	Road Commissioner; Green UP Vermont.org.; FWES
L. Support regional health and human service providers that provide critical services to Woodbury residents.	xix. Approve annual contributions to organizations based upon request.	SB	OG	Woodbury voters
Telecommunications and Broadband Connectivity Goal: Increase cell and broadband coverage for social, economic, educational and emergency service needs.				
Objective	**Action**	**Responsible Party**	**Time frame**	**Possible partners**
M. Make high speed internet connections available to all Woodbury homes and businesses to fulfill a basic requirement of modern life, commerce, and educational access.	xx. Maintain a town representative on the regional Consolidated Union District (CUD)- CV Fiber.	SB; PC	ST & MT	CV Fiber; Hardwick Electric Department; CVRPC; Vermont Community Broadband Board
	xxi. Advertise WiFi hot spots.	SB	OG	Comcast; CV Fiber

N. Collocate new or expanded wireless telecommunication at sites and locations which limit or lessen the environmental or aesthetic impacts on the natural setting.	xxii. Create a scenic resources map for Woodbury and identify specific strategies for protection.	PC; CC	ST & OG	CVRPC
	xxiii. Work collaboratively with telecommunication developers to identify suitable locations.	PC; CC	ST & OG	CVRPC; SB
Energy Goal: To increase energy efficiency and energy conservation while supporting the transition to renewable energy sources.				
Objective	**Action**	**Responsible Party**	**Time frame**	**Possible partners**
O. Implement the Objectives of the Woodbury Enhanced Energy Plan.	xxiv. Undertake the Actions specified in the plan.	SB; PC	ST & OG	CVRPC; Efficiency Vermont; DPS
P. Based upon more extensive public input determine if the Town should include more defined and specific parameters to guide the siting of larger scale renewable energy generation facilities.	xxv. Consider upgrading Highest Priority Forest Blocks from a "Possible Constraint" to a locally identified "Known" Constraint based upon definitions included in the Enhanced Energy Plan.	CC; PC	ST & OG	FW
	xxvi. Identify any additional local sites that should be added to the list of State Identified Preferred Sites based upon definitions included in the Enhanced Energy Plan.	CC; PC; ZA	ST & OG	ANR-Energy Generation Siting Policy Commission
	xxvii. Evaluate the benefits of establishing clear and specific guidelines that can be used when evaluating proposed large-scale projects.	CC; PC	ST & OG	ANR-Energy Generation Siting Policy Commission

Appendix:

Woodbury Enhanced Energy Plan

ENERGY PLAN

FOR THE
TOWN OF WOODBURY

VERSION CONTROL

REVISION DATE	SECTIONS REVISED & PAGE(S) NUMBER	REVISION AUTHOR
02/07/2020	LOCAL FOOD; PAGES 15 & 16	WDBY Planning Commission
03/10/2020	HYDRO ELECTRIC; PAGE 17	WDBY Planning Commission
03/10/2020	SOLAR; PAGES 17 & 18	WDBY Planning Commission
03/10/2020	WOOD; PAGE 19	WDBY Planning Commission
03/10/2020	SITING; PAGE 20	WDBY Planning Commission
4/13/2020	CITATION, PAGE 2	WDBY Planning Commission
4/27/2020	TABLE 13 RECONFIGURED, PAGE 21	WDBY Planning Commission
4/27/2020	CHANGED FOOTER	WDBY Planning Commission
4/27/2020	TABLE OF CONTENTS EDITED	WDBY Planning Commission
9/13/2021	Minor rewording of actions to be consistent with 2021 town plan	CVRPC

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EDITED BY:

THE WOODBURY PLANNING COMMISSION

Table of Contents

Executive Summary & Introduction

With the passage of Act 174 in 2016, Towns have been allowed a higher level of deference in the Section 248 proceedings if they meet specific planning standards, which would allow Woodbury an opportunity to reexamine the actions its community is taking to meets its energy goals.

Through Act 174, three primary planning areas are identified and need to be met satisfactorily for successful compliance. These sections include Analysis & Targets; Pathways & Implementation Actions; and Mapping. All three sections include an evaluation of energy sectors that include thermal (heating), electrical, and transportation.

Section I: Analysis & Targets

This section provides a baseline of information for where a municipality currently stands in terms of energy and identifies the trajectories and pace of change needed to meet targeted reductions and conservation of energy. It includes information on current electricity use for residential and non-residential uses; existing and potential renewable resource generation; and current transportation energy use information. Additionally, targets are established to provide milestones for thermal efficiency, renewable energy use, and conversion of thermal and transportation energy from fossil fuels to renewable resources. These milestones are intended to help the municipality measure progress towards the overall goals and are not identified as requirements. Targets are established for the years 2025, 2035, and 2050 which coincide with the State Comprehensive Energy Plan.

Specific information in this section notes that Woodbury currently uses approximately 5,589 megawatt hours of electricity on an annual basis across the identified sectors. By comparison, Woodbury's share of new renewable energy generation needed to meet the state's goal is approximately 5,831 megawatt hours. Based on the mapping and resource data (Section III), Woodbury has resources available to generate approximately 4,276,321 megawatt hours of energy.

Other analysis includes 2050 targets for fuel switching of vehicles from fossil based to alternative power, and conversion or installation of high efficiency heating systems for residential and commercial structures. Specific targets for Woodbury include over 1,200 alternative powered vehicles and approximately 212 heating system changeovers. The specific 2050 targets for transportation and heating renewable use in Woodbury are 90.2% and 93.1% respectively. It's important to note that the targets for alternative powered vehicles listed in Section One are based on maintaining current land use and transportation policies. Transit, ride sharing, telecommuting, or similar policies may be prioritized by the Town which would impact these targets and reduce dependency on individual vehicle needs.

Section II: Pathways & Implementation Actions

Section II provides the basis for how Woodbury will meet their target year goals as noted in Section I. The implementation actions are categorized by:

1. Conservation & efficient use of energy
2. Reducing transportation demand and single occupancy vehicles trips, and encouraging the use of renewable sources for transportation
3. Patterns and densities of land use likely to result in conservation of energy
4. The siting of renewable energy generation

The implementation actions that are identified in this section focus primarily in areas where the Town of Woodbury is already working to support its residents and businesses through local land use, transportation, and environmental planning activities.

To this end, the current Woodbury Town Plan was first reviewed and implementation actions that pertained to any of the above-mentioned sections were noted. These implementation items were carried forward for inclusion in the energy plan to establish consistency with the two documents. To ensure all the categories for implementation as noted above were adequately addressed, guidance from the Department of Public Service related to implementation was utilized.

The implementation actions identify who will be responsible for completing each action, the timeframe for when it should be completed, and an anticipated outcome that will help provide a measure of success. This section will serve as the basis for how energy planning will be incorporated into local activities. The implementation actions that were included are based on Woodbury's ability to lead the action. This will create consistency regarding implementation and put the responsibility for action on the Town. Other partners are listed when appropriate to indicate which groups will be engaged to support the successful completion of the identified actions.

Section III: Mapping

The mapping section allows the Town of Woodbury to visually identify where renewable energy generation is most suitable. This section combines resource information with specific known and possible constraints to the development of renewable energy generation. The mapping section also allows the opportunity to identify preferred locations for renewable energy development and areas that are unsuitable for development of any kind. In addition, the maps identify existing infrastructure to support renewable energy development.

In general, the mapping information looks at state-level data and breaks it down to a municipal perspective. From there, an analysis was done (as noted in Section I) regarding the potential renewable energy generation that might be possible based on resource areas and constraints.

This information is useful to visualize what geographies throughout Central Vermont are most ideally suited or best to avoid regarding renewable energy siting.

This section also contains specific information regarding the development and siting of renewable energy resources that are reflected on the maps. The Regional Planning Commission did, however, identify additional possible constraints to be considered. These include elevations above 2,500 feet, slopes greater than 25%, municipally owned lands, and lakeshore protection buffer areas of 250 feet. The decision was made to include these resources as possible constraints to allow for further analysis by the region or the municipalities to determine if development of renewable energy generation facilities may be appropriate based on specific conditions.

Appendices

There are two appendices included with this plan. Appendix A provides definitions for the known, possible, and regional constraints that are included on the maps and discussed in Section III. These definitions include source information and, in several instances, provide insight as to why the resource is listed as a known, possible, or regional constraint. Appendix B includes the specific resource and constraint maps. Included in the resource mapping is data specific to wind, solar, hydrological, and woody biomass. All these maps also include information regarding three-phase power and transmission lines; roads; and other relevant data used to assist with siting of renewable energy development.

How This Plan Will Be Used

The Woodbury Energy Plan will establish the policies that will help the Town achieve its share of the state's goal of 90% of the state's energy coming from renewable sources by 2050, as outlined in the 2016 State Comprehensive Energy Plan. For this document to have standing, it will need to receive a Determination of Energy Compliance (DOEC) from the Central Vermont Regional Planning Commission (CVRPC). This determination will give the Woodbury Town Plan "substantial deference" before the PUC during their review of applications for Certificates of Public Good related to renewable energy generation facilities. Once a DOEC has been issued, the Woodbury Town Plan will be used to establish a position in proceedings before the PUC if warranted. Additionally, where applicable, the Town Plan will be used during Act 250 proceedings before the District 5 Environmental Commission.

Additional Energy Generation Technology

The general premise of the Woodbury Energy Plan is based on the idea that generation of energy will be achieved using more renewable sources and less fossil fuel-based resources. To this end, the focus for generation of energy is primarily based on existing technologies such as solar, wind, and hydroelectric. Additionally, the plan notes woody biomass and biogas as renewable forms of energy generation when developed in a sustainable manner. This direction is taken from the State's Comprehensive Energy Plan which focuses on electrification of the grid

with alternative energy generation in order to meet their goals of 90% of the state's energy use coming from renewable sources by 2050.

The sources of renewable energy generation that are identified in this plan include current technologies that are known and supported in Vermont. Advances in the development of renewable energy technologies may result in generation measures or techniques that are not currently considered in this plan but may be more efficient or effective. As such, this plan will consider renewable generation technologies that do not have an adverse impact on the Town of Woodbury, the Central Vermont Region, or the policies that guide the Planning Commission and not be limited exclusively to the generation techniques and technologies noted herein.

Analysis & Targets

In order to adequately determine if the Town of Woodbury is on the right path to meeting its share of the state's goal of 90% of the energy used being produced by renewable resources, an identification and analysis of current energy use is necessary. To this end, the following questions have been identified to help determine current energy use and targets moving forward.

1. Does the plan estimate current energy use across transportation, heating, and electric sectors?
2. Does the plan establish 2025, 2035, and 2050 targets for thermal and electric efficiency improvements, and use of renewable energy for transportation, heating, and electricity?
3. Does the plan evaluate the amount of thermal-sector conservation, efficiency, and conversion to alternative heating fuels needed to achieve these targets?
4. Does the plan evaluate transportation system changes and land use strategies needed to achieve these targets?
5. Does the plan evaluate electric-sector conservation and efficiency needed to achieve these targets?

These five questions and their respective responses serve as the basis for identifying where the Town of Woodbury is now, where it needs to go, and how it will get there in terms of its energy future.

1. **Estimates of current energy use across transportation, heating, and electric sectors.**

Transportation

Transportation is a large consumer of energy in Woodbury. Transportation typically consists of passenger vehicles, light duty trucks, and heavy-duty trucks. It may also include transportation related to public transit, rail, or air service; however, these uses are minimal and trips may not originate within the municipality. As such, this section focuses primarily on vehicles, however rail, air, and public transit are addressed in other sections of the energy plan and throughout the municipal plan. Table 1 provides an overview of the current energy usage in Woodbury related to transportation.

Table 1
Current Transportation Energy Use

Transportation Data	Municipal Data
Total # of Vehicles (ACS 2011-2015)	744
Average Miles per Vehicle (VTrans)	12,500
Total Miles Traveled	9,300,000
Average Gallons Used per Vehicle per Year (VTrans)	576
Total Gallons Use per Year	500,000

Transportation BTUs (Billion)	60
Average Cost per Gallon of Gasoline (RPC)	2.31
Gasoline Cost per Year	$1,155,000.00

This table uses data from the American Community Survey (ACS) and Vermont Agency of Transportation (VTrans) to calculate current transportation energy use and energy costs.

Electricity

In 2016, Woodbury's electricity usage was split at 17% by commercial and industrial customers, and 83% by residential customers. Utility rates are regulated by the Vermont Public Utility Commission. In 2018, the U.S. Energy Information Administration reported the average cost per kilowatt hour in Vermont was approximately 15 cents and approximately 18 cents for all New England. Woodbury's current electricity usage can be found in Table 2, below:

Table 2 Current Electricity Use	
Use Sector	Current Electricity Use
Residential (Efficiency Vermont) (kWh)	4,618,193
Commercial and Industrial (kWh)	970,901
Total (kWh)	5,589,093

This table displays current electricity use within the municipality. This data is available from Efficiency Vermont (EVT).

Home Heating

2015 American Community Survey (ACS) Data indicate that approximately 14.6% (60) of homes in Woodbury are heated with fuel oil. The number of homes heated with propane and other bottled fuel oils has only decreased slightly from 96 in 2010 to 81 in 2015. Electric heat has increased from 0 in 2010 to 10 in 2015, and wood heat has dramatically increased from 133 in 2010 to 240 in 2015.

Municipal Energy Use:

Table 3 provides a breakdown of the fuel sources used for residential heating in Woodbury while Table 4 lists the current commercial energy use.

Table 3 Current Municipal Residential Heating Use				
Fuel Source	Municipal Households (ACS 2011-2015)	Municipal % of Households	Municipal Square Footage Heated	Municipal BTU (in Billions)
Natural Gas	0	0.0%	0	0.00
Propane	81	19.7%	141,648	8.50
Electricity	10	2.4%	18,160	1.09
Fuel Oil	60	14.6%	85,352	5.12
Coal	0	0.0%	0	0.00
Wood	240	58.4%	415,864	24.95

Other (Includes Solar)	20	4.9%	36,320	2.18
No Fuel	0	0.0%	0	0.00
Total	**411**	**100%**	**697,344**	**41.84**

This table displays data from the ACS that estimates current municipal residential heating energy use.

Table 4 Current Commercial Energy Use			
	Commercial Establishments in Municipality (VT DOL)	Estimated Thermal Energy BTUs per Commercial Establishment (in Millions) (VDPS)	Estimated Thermal Energy BTUs by Commercial Establishments in Municipality (in Millions)
Municipal Commercial Energy Use	10	394	3,940

This table uses data available from the Vermont Department of Labor (VT DOL) and the Vermont Department of Public Service (DPS) to estimate current municipal commercial establishment energy use in the municipality.

2. 2025, 2035, and 2050 targets for thermal and electric efficiency improvements, and use of renewable energy for transportation, heating and electricity.

Energy efficiency is commonly viewed as the most effective and lowest-cost option for reducing energy consumption for electricity, heat, and transportation. Energy efficiency and conservation efforts such as improved insulation and weatherization of new and existing structures; improvements in building design; and the use of high-efficiency vehicles often have a dramatic impact on reducing fuel consumption. These methods are supported and encouraged by the town. In a challenging economy and at a time of increasing concern for the impacts of climate change, steps to reduce fuel use, fuel expenditures, and to shrink emissions make good sense for the pocketbook and the environment.

For the purposes of this section, thermal and electric efficiency will be defined as overall improvements or reductions in the amount of energy used to run mechanical systems or provide climate control for structures. To effectively identify efficiency improvements for Woodbury, the Central Vermont Regional Planning Commission has provided targets for efficiency improvements for each of the target years. These improvements relate to residential, commercial, and overall electric efficiency. The target number may seem to be skewed towards the later years, however there is an expectation that efficiencies will increase with technological advances and occur over time regardless of additional actions being taken. The thermal efficiency targets for residential and commercial improvements are noted in Table 5.

Table 5 Targets for Thermal Efficiency Improvements			
Year	2025	2035	2050
Residential – Increased Efficiency and Conservation (% of municipal households to be weatherized)	20%	42%	92%
Commercial - Increased Efficiency and Conservation (% of commercial establishments to be weatherized)	22%	33%	61%

This table displays targets for thermal efficiency for residential and commercial structures based on a methodology developed by DPS using data available from the regional Long-range Energy Alternatives Planning (LEAP) analysis and ACS. The data in this table represents the percentage of municipal households and commercial businesses that will need to be weatherized in the target years.

For Woodbury to help support the state's goals of 90% of the energy used being derived from renewable sources by 2050, the Central Vermont Regional Planning Commission allocated megawatt hour targets for the years 2025, 2035, and 2050. This municipal target is based on an allocation from a region-wide target for renewable energy generation. Table 6 notes Woodbury's targets for renewable energy use and Table 7 identifies the targeted renewable energy generation.

Table 6 Targets for Renewable Energy Use			
Year	2025	2035	2050
Renewable Energy Use - Transportation	9.6%	31.3%	90.2%
Renewable Energy Use - Heating	51.0%	65.9%	93.1%

This data displays targets for the percentage of transportation and heating energy use coming from renewable sources during each target year. This data was developed using the LEAP analysis.

Table 7 Targets for Renewable Energy Generation			
Year	2025	2035	2050
Total Renewable Generation Target (in MWh)	1,457	2,332	5,831

Renewable generation targets for municipalities were developed by the regional planning commission.

Groups to Support Energy Planning

State and local support for energy planning makes identifying energy related actions and implementing energy objectives a more manageable task. Several groups exist that fill this role. A brief overview of these groups is noted below including some of the accomplishments that benefit the Town of Woodbury.

Efficiency Vermont

Efficiency Vermont helps all Vermonters to reduce energy costs, strengthen the local economy, and protect the environment by making homes and businesses energy efficient. A volumetric charge on electric customers' bills supports energy-efficiency programs.

Efficiency Vermont provides technical assistance, rebates, and other financial incentives to help Vermont households and businesses reduce their energy costs with energy-efficient equipment, lighting, and approaches to construction and major renovation. Additionally, it partners extensively with contractors, suppliers, and retailers of efficient products and services throughout the state.

It is operated by a private nonprofit organization, the Vermont Energy Investment Corporation, under an appointment issued by the Vermont Public Utility Commission.

3. **Evaluation of the amount of thermal-sector conservation, efficiency, and conversion to alternative heating fuels needed to achieve these targets.**

Energy Audits and Energy Efficiency Measures

The Environmental Protection Agency estimates that half of the energy used in most buildings is for heating and cooling. Much of this energy is lost -seeping through cracks in windows and doors for instance -which wastes energy and money and makes homes and businesses less comfortable.

Weatherization is the practice of modifying a building to protect its interior from the elements, to reduce energy consumption, and to optimize energy efficiency. Investing in thermal efficiency improvements -primarily air sealing, insulation, and heating system replacements--can dramatically reduce a home's heating energy use and an owner's fuel bills. Vermonters' 2010 fuel bills were nearly twice as much as those of a decade earlier.

An estimated 62,000 single and multi-family homes in Vermont will require energy efficient improvements by 2020. The state's volatile weather conditions play a critical role in how buildings can cost-effectively be heated and that most of the economic benefit of money Vermonters spend on fossil fuel accrues outside the state. At current fuel prices home energy efficiency investments can save Vermont residents approximately $1,000 per year.

As a result, the task force suggests "comprehensive and rapid weatherization" of Vermont's buildings to:

- Reduce the vulnerability of Vermont ratepayers to fuel market volatility and dramatic weather fluctuations.
- Ensure that more of the money spent on energy will stay within the Vermont economy.

One of the most important goals in the 2016 Vermont Comprehensive Energy Plan is for the state to use energy audits, weatherization, and other tools to substantially improve the energy fitness of 25% of the state's housing stock by 2020.

After weatherization, the next step to increasing home heating efficiency is replacing outdated or inefficient home heating systems with high efficiency units. In general, this conversion would typically include replacing a system that used fossil fuel such as oil with an electric heat pump, wood burning system, or other renewable based heating systems. Specifically, Table 8 identifies

the number of new efficient wood heating systems or heat pumps needed in each target year to meet Woodbury's portion of the state's comprehensive energy goals.

Table 8 Thermal Sector Conversions Per Target Year (Residential and Commercial)			
Year	2025	2035	2050
New Efficient Wood Heat Systems (in units)	1	0	8
New Heat Pumps (in units)	42	107	204

This table provides a target for new wood heating systems and new cold climate heat pumps for residential and commercial structures in the municipality for each target year. This target was calculated using data from LEAP and ACS.

The Town of Woodbury is significantly forested, and recognizes the importance of supporting the local logging businesses and regional economy. The Town would like to exceed the proposed targets for New Efficient Wood Heat Systems, as these systems would provide a larger benefit to the Town in the energyand economic sectors. The Town will still pursue and support the transition to cold climate heat pumps, but would like to see more new efficient wood heat systems in the future (beyond 8).

A building energy audit is a service where the energy efficiency of a structure is evaluated by a person using professional equipment (e.g., blower doors, infrared cameras) to identify best ways to improve energy efficiency in heating and cooling the house. The goals are to:

- Evaluate the building's overall thermal performance.
- Identify cost effective ways to improve the comfort and efficiency of the building.
- Estimate the potential savings in fuel and expenses for the proposed changes.

Many building and energy contractors in Central Vermont offer home and business energy audits for a fee (typically ranging from $300-$500). Depending on income, some families or individuals may qualify for free audits or energy efficiency grants from Efficiency Vermont or other organizations.

4. Evaluation of transportation system changes and land use strategies needed to achieve these targets.

Transportation Efficiency

According to the 2016 Vermont Comprehensive Energy Plan, transportation accounts for approximately one third of the overall energy use in Vermont, at 33.7%. Nationally, transportation represents 28.6% of overall energy use. This difference is a result of Vermont's higher dependence on automobile transportation due to the state's rural character, more dispersed population, as well as a relatively small industrial base.

Gasoline and diesel account for more than a quarter of all energy consumed in Vermont across all energy sectors. Gasoline and diesel consumption are twice that of fuel oil and kerosene used

for heating. Petroleum combustion in the transportation sector is also the state's largest contributor to greenhouse gas emissions.

Fuel prices are typically higher in northern than in southern New England. Significant increases in the costs of gasoline, diesel fuel, and heating fuel have occurred over the last decade. Price spikes in recent years highlight our area's heavy reliance on limited sources and types of fuel and leave the local population, particularly low-income residents, vulnerable to fuel shortages and price fluctuations.

One component of reducing fossil fuel-based energy used in the transportation sector is to convert or replace older vehicles with alternative fuel vehicles such as electric or biodiesel. Table 9 identifies the targets for the number of new electric or biodiesel vehicles over each of the target years to help Woodbury reduce its transportation energy consumption to a point that will help meet the state's comprehensive energy planning goals. Again, this information assumes efficiency and improved technologies will be included in the development of vehicular fuel technology.

It should be noted that another consideration is to reduce the total number of vehicles overall. This can be done through the creation of compact development patterns, increased transit opportunities, or alternative transportation options such as bicycles or walking. The Town should evaluate additional objectives that will promote a shift away from vehicle use rather than rely on the conversion of vehicles to renewable fuels.

Table 9
Transportation Fuel Switching Targets

Year	2025	2035	2050
Electric Vehicles	64	442	882
Biodiesel Vehicles	111	206	335

This tables displays a target for switching from fossil fuel-based vehicles (gasoline and diesel) to electric vehicles and biodiesel vehicles. This target is calculated by using LEAP and ACS data.

5. **Evaluation of electric sector conservation and efficiency needed to achieve these targets.**

Conservation and efficiency of electricity is a key component to achieving the state's comprehensive energy planning goals. Over time, advancements in technology will provide a degree of the needed efficiency and conservation measures to achieve these goals, but also, efforts can be taken now to ensure the Town of Woodbury is on track to meet its conservation and efficiency targets. Table 10 outlines the electric efficiency improvements needed for each of the three target years. Additionally, information related to more proactive ways to achieve these efficiencies are also noted below.

Table 10 Targets for Electric Efficiency Improvements			
Year	2025	2035	2050
Increase Efficiency and Conservation	1.5%	7.3%	15.2%

Data in this table displays a target for increased electricity efficiency and conservation during the target years. These targets were developed using regional LEAP analysis.

Energy Efficient Design

It is much more time-and cost-effective to plan, design and build a structure and its systems with energy efficiency in mind at the outset than to perform weatherization activities after the building has been constructed.

Leadership in Energy and Environmental Design (LEED) consists of a suite of rating systems for the design, construction and operation of high-performance green buildings, homes and neighborhoods. Developed by the U.S. Green Building Council, LEED is intended to provide building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

Across Vermont, in 2012 nearly one-third of new homes were EnergyStar rated. The 2016 Vermont Comprehensive Energy Plan sets a goal of 60% by 2020.

School Energy Efficiency

Schools are one of the largest consumers of energy in most Vermont communities. Because they are such large consumers of a variety of energy sources, they often offer significant opportunities for saving fuel and taxpayer expenditures. There have been local efforts to save schools, and local taxpayers, fuel and funds.

The Woodbury Elementary School converted its heating system to a wood pellet system. It also underwent weatherization improvements that resulted in a higher-than-average energy efficiency rating. These improvements resulted in the school receiving an award for their achievement.

Local Food

Woodbury's location is in within twenty (20) miles robust COOP food stores in Hardwick, Montpelier and Morrisville. These farmer to consumer markets afford Woodbury residents access to locally grown vegetables and animal products and strengthens the relationships between food producers and consumers. Buying direct from COOPS or at local farmer's markets ensures residents receive fresh, healthy food at a competitive price without incurring excessive transportation costs.

Woodbury residents may choose to shop at large grocery chain stores where he average food item in the average grocery store travels between 1,000 and 1,500 miles to reach the table. Food transportation consumes a considerable amount of energy, and the related emissions

contribute to climate change. A typical meal bought from a conventional supermarket chain – including some meat, grains, fruit and vegetables – consumes 4 to 17 times more petroleum for transport than the same meal using local ingredients.

Renewable Energy

The Town of Woodbury actively supports the use and development of renewable energy. Specifically, through 2016 renewable energy generation installations create approximately 234 megawatt hours of energy each year. This includes a mix of solar and wind. This allocation of renewable energy generation will help the Town meet their renewable energy goals. The specific breakdown of renewable energy generation is outlined in Table 11. Table 14 also provides a breakdown of existing renewable energy generation and identifies those sources generating 6 kW or more.

Table 11
Existing Renewable Energy Generation

Renewable Type	MW	MWh
Solar	1.09	122.9
Wind	0.00	0.00
Hydro	0.00	0.00
Biomass	0.00	0.00
Other	0.00	0.00
Total Existing Generation	**1.09**	**122.9**

This table shows existing renewable generation in the municipality, in MW and MWh, based on information available from the Vermont Department of Public Service.

Hydroelectric

In the past, local waterways powered numerous mills and provided small-scale electricity across Vermont. Today, power from in-state and out-of-state hydroelectric dams (most notably Hydro Quebec) supply approximately 40% of Vermont's annual power needs.

Woodbury is home to several dams. Two were used to generate electricity, one located on Nichol's Pond and the other located on East Long Pond. Both were built in the early 1900's as a backup water supply. Today, these dams are historic, and there are no plans to convert these areas to hydroelectric usage, considering the lack of cost-effectiveness.

Currently, there are no hydroelectric facilities in Woodbury. However, due to the environmental impact of damming these sites for the small generation boost, there are no plans in place currently to develop hydroelectricity in Woodbury.

Solar

Converting radiation from the sun into electricity is a clean, renewable energy source. Solar photovoltaic (PV) cells convert sunlight into electricity for homes and businesses, while solar

thermal arrays provide hot water for domestic use and may even be designed to augment a household's heating system.

Advances in technology have improved solar efficiency and solar arrays are becoming more affordable. The cost to install one kilowatt of PV in Vermont fell by nearly 40% from 2004 to 2011. Federal and state incentives and leasing programs have improved financial accessibility to the technology.

As of 2018, solar collectors were installed at 18 sites in Woodbury with a total photovoltaic (PV) capacity of 109 kW. This number derives from numerous, dispersed residential scale solar projects. Table 13 lists the number of PV sites by the serving electric company.

Woodbury has made great strides to incorporate solar energy into its energy portfolio. According to the Energy Action Network's Energy Dashboard, Woodbury ranks 128th among Vermont municipalities in total solar installation with 18 sites. Several south-facing roofs and slopes provide the potential for even greater use of the technology, although some roofs may need to be retro-fitted to support solar panels.

[1]In 2014, the Legislature enacted Act 99, an Act relating the self-generating and net metering, which increased the Net-Metering program's cumulative capacity cap to 15% of each utility's peak capacity. As the amount of distributed renewable energy in Vermont has grown significantly over the past several years, the cost of installing solar generation has also decreased dramatically. Financial incentives for net-metered solar, however, have remained high, making it the most expensive of Vermont's renewable energy programs. Solar net-metering systems receive up to 18.9 cents per kilowatt-hour (kWh) compared to solar prices under the State's standard-offer program of 10-13 cents and roughly similar prices for power purchase agreements and utility-built systems.

At the same time, the rapid buildout of distributed generation has caused important changes in the state's electric system. One positive effect of this development, particularly as a result of increased solar capacity, has been that Vermont's system peak is no longer occurring during mid-day, which means that Vermont avoids regional capacity charges. On the other hand, the expansion of distributed generation has led to stress on some portions of the distribution grid, necessitating costly investments to interconnect additional generation.

A majority of Woodbury residents are served by Hardwick Electric Department, HED, which has expressed the problem of grid constraints being able to handle solar electricity being fed onto the grid. As such, HED has imposed limits on how much solar the utility is willing to allow to connect to the grid through net-metering. This forced constraint greatly limits Woodbury's ability to achieve the State's 2050 renewable energy goals.

According to the Vermont Energy Atlas, Woodbury has the capability to produce 565 megawatt hours on rooftop solar alone. There is also the possibility of 995,136 megawatt hours from

[1] State of Vermont Public Utility Commission Case no. 18-0086-INV

ground mounted solar as well. Additional information on potential generation is noted in Table 12 and is reflected on the maps in Appendix B.

Commercial leasing programs now allow households and companies access to solar energy at fixed costs that often are less than their current electricity bills. Further advances in technology will likely improve the efficiency, and lower the cost, of solar panels. Finding space for additional solar arrays remains an issue in Woodbury, particularly for residents and businesses lacking south-facing rooftops or land.

Wind

Improvements in turbine technology in combination with federal and state subsidies have recently made investments in wind power more attractive across the country as well as in Vermont. The Vermont Energy Atlas identifies the possibility of generating 3,280,620 megawatt hours of wind in Woodbury. The primary wind production area sits on the western ridgeline in Woodbury, with additional generation possible in the northern-center of Town. However, these locations also are highest priority forest blocks for connectivity, as well as some agricultural soils. Specific suitability for wind resources is noted in the mapping section. The wind maps identify where wind speeds are appropriate for smaller scale wind generation and do not include large industrial scale wind suitability.

In the past, a wind development was proposed on land previously used for logging. In assessing community support for this project, the Town of Woodbury's residents were decidedly opposed to the development of wind in that location. Since this proposal, the Town of Woodbury has not had any large-scale wind developers proposing new locations in Town.

In order to support large-scale wind projects, it is believed that projects must meet certain criteria to ensure that they do not cause undue negative impacts on natural, recreational, and aesthetic resources. Woodbury plans to establish clear and specific guidelines that can be used when evaluating proposed large-scale wind projects. Also, the current Central Vermont Regional Energy Plan limits wind generation facilities to hub height of 125 feet and restricts development above 2,500 feet in elevation. Woodbury will work to maintain consistency with these regional limits.

Wood

Historically, wood has been Vermont's, and Woodbury's, most abundant local energy source. Statewide residential firewood consumption grew from 275,000 cords per year in 1997 to 315,000 cords in 2008, a nearly 15% increase. Current use of cordwood for heating in Woodbury is unknown. In addition to firewood, wood biomass heating, in the form of woodchips and pellets, is becoming more popular.

Woodbury is significantly forested, and the Woodbury Planning Commission recognizes the importance of supporting the local logging businesses and regional economy. The Commissioners would like to exceed the proposed targets for New Efficient Wood Heat Systems,

as these systems would provide a larger benefit to the Town in the energy and economic sectors.

[2]More specifically, the 2016 State Comprehensive Energy Plan, CEP, calls for doubling the use of wood heating in Vermont. Expanded use of advanced wood heat will help Vermont make measurable progress toward several key goals. Developing local demand for cordwood, wood chips, and pellets will help create vital markets for low-grade timber from managed forests. Heating with local wood fuels reduces the economic drain on Vermont's economy. Factoring that only 22 cents of every dollar spent on heating oil or propane are likely retained in the local economy, and 80 cents of every dollar spent on wood are likely retained in the local economy,1 an estimated net $70 million was retained in the Vermont economy in 2016 by Vermonters choosing to heat with wood rather than fossil fuels. Wood heat lowers and stabilizes energy costs and keeps dollars circulating in the local economy. Wood heat also creates and supports jobs in the forestry, wood processing, and transportation sectors.

Approximately 37% of Vermont's households utilize biomass (including cord wood and wood pellets) to heat at least a portion of their homes.

There are potential negative side effects to extensive wood harvesting and burning, among them habitat impairment, soil erosion, sedimentation and water pollution if forests are not properly managed, as well as the degradation of air quality and an increase risks of accidental fires. These are, however, easily manageable risks. Best forest management practices, as outlined by the state and independent forest certification groups, can reduce the adverse impacts of harvesting while regular maintenance of wood stoves and adherence to fire codes lessens the risk of accidental fires.

According to the Vermont Department of Public Service, the efficiency factor for biomass is between 60% and 80%. Use of wood for heating is calculated as carbon-neutral; that is, the carbon sequestered by a tree during its lifetime balances with the carbon emitted during its burning.

If factoring in the fossil fuels used to cut and haul wood/wood biomass, as well as the inefficiencies of current biomass burning, wood may not be fully carbon neutral. More efficient burning of woody biomass would greatly improve biomass's potential for wider adoption as a local power source. This could be supported by converting to high-efficiency wood heating systems as noted in Table 8.

<u>Other Local Renewable Energy Sources</u>

Other potential local renewable energy sources include geothermal energy, which uses the temperature differential in water taken from deep wells to heat and cool buildings.

[2] Expanded Use of Advanced Wood Heating in Vermont March 2018-Biomass Energy Resource Center

Siting

An analysis of existing land and renewable resource potential will help determine the amount of local renewable energy that could be developed within the Town of Woodbury. Table 7 identifies the amount of renewable energy generation (in megawatt hours) that the Town of Woodbury would need to generate by 2050 to help meet their share of the Region's total renewable energy generation.

The information in Table 12 includes an analysis of the renewable energy generation potential and will be complemented by information and maps that are in Appendix B of the plan. There is adequate land area available for Woodbury to accommodate renewable energy generation that can meet their share of the region's renewable energy allocation. It should be noted, however, that not all renewable energy generation is appropriate at the same scale. For example, wind may be appropriate in the Town of Woodbury at a residential scale, but not at a commercial scale as detailed in the Mapping Section, in Appendix "A", and as illustrated on both the Known and Possible Constraints Maps, and the Wind Resources Map. Local objectives will need to be established to address these issues. Also, it should be noted that not all areas are appropriate for development of renewable energy and more detailed analysis may be needed to identify appropriate locations for renewable energy development.

One final factor to consider is efficiency of renewable resources and their ability to generate energy. Since not all sources of renewable energy generation provide the same level of capacity, it is important to understand the efficiency differences between the common types of renewable generation. Simply put, the sun doesn't always shine and the wind won't always blow therefore these renewable generators are not always producing energy. These efficiency factors will allow the municipality to utilize whatever renewable resource is most appropriate for the specific circumstances.

Table 12
Potential Renewable Energy Generation

Renewable Type	MW	MWh
Rooftop Solar	0.46	565
Ground-mounted Solar	811.43	995,136
Wind	1,070.00	3,280,620
Hydro	0.00	0
Biomass and Methane	0.00	0
Other	0.00	0
Total Renewable Generation Potential	**1,881.89**	**4,276,321**

Renewable generation potential is based on mapping completed by the regional planning commission that is based on the Municipal Determination Standards and associated guidance documents developed by DPS. The renewable generation potential is expressed in MW and MWh by the type of renewable resource (solar, wind, hydro, etc.).

Table 13

Existing Renewable Solar Energy Generation in Woodbury based on existing Certificates of Public Good			
Renewable Resource Type	Utility	Capacity kW	Number of Sites
Solar	Hardwick Electric Department	98.3 kW	16
Solar	Washington Electric Coop	10.3 kW	2

This table represents information found through Certificates of Public Good issued by the Public Utility Commission. More information can be found at the Vermont Community Energy Dashboard.

Conclusion

As noted throughout this section, the Town of Woodbury faces challenges like the rest of the state regarding its energy future including the need for conservation, renewable energy development, and changing habits and attitudes towards renewable technology and land use choices. All these components need to work together in order to ensure a collective and comprehensive approach to energy planning is initiated.

The information provided in this section has shown that Woodbury can shape its energy future within the spectrum of the avenues that it can control. The unknown component is whether the changes and development will occur and when. The State Comprehensive Energy Plan has set a goal of 90% renewable energy by the year 2050. This goal is achievable if all stakeholders including the state, the region, the municipalities, the energy developers, the private land owners, the special interest groups, and the interested citizens come together to discuss the issues and work collectively to identify the outcomes that satisfy the needs of the whole to the best of their ability.

This plan primarily explores renewable energy related to the production of electricity and electrification of the grid. In addition to the resources noted herein, it's important to consider other forms or technologies that could contribute to our renewable energy future. With advancements in safety, efficiency, and technology, the Region's energy future could look vastly different in the next five or ten years. This will not only impact the generation of energy, but the delivery and infrastructure to support distribution of energy.

Pathways and Implementation Actions

The following goals and implementation actions outline the specific pathways for the region to consider in order to effectively support the State of Vermont's goals that are outlined in the 2016 Comprehensive Energy Plan. These goals are intended to cover a variety of pathways that address land use and siting of developments (including renewable energy generation); efficiency of building construction and weatherization; and fuel switching from fossil-based fuels to more sustainable and renewable options.

A. Conservation and Efficiency

Objective A-1: Increase conservation of energy by individuals and organizations.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Formally identify an Energy Coordinator and post their contact information on the Town Website.	Planning Commission, Town Administration	High 1 – 2 Years	Energy Coordinator is identified and contact information is shared to community members.
2	Hold public meetings and invite industry professionals to present on weatherization and fuel switching options for residents.	Planning Commission	High/ Sustained 1 – 2 Years	Meetings are held and presentations are given on energy improvements residents can make.

Objective A-2: Promote energy efficiency in the design, construction, renovation, operation, location and retrofitting of systems for buildings and structures.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Revise Zoning Bylaws to include references to Statewide Residential and Commercial Building Energy Standards.	Planning Commission	High 1 – 4 Years	Zoning Bylaws are revised to include information on residential and commercial building standards.
2	Distribute information on energy standards and efficiency options to residents and local developers.	Zoning Administrator	High/ Sustained 1 – 2 Years	Zoning Administrator is provided information to distribute with permit applications and to interested residents.

Objective A-3: Identify ways to decrease the use of fossil fuels for heating.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Host a presentation of alternative heating fuels, their cost to implement, and available incentives for residents of Town.	Planning Commission, Efficiency Vermont, Industry Professionals.	Medium 1 -5 Years	A presentation is held with industry professionals to showcase alternative heating options.

Objective A-4: Demonstrated municipal leadership by example regarding efficiency of municipal buildings.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Conduct baseline energy audits of all municipal buildings and structures, including the school.	Planning Commission, Efficiency Vermont	Medium 1 – 5 Years	Baseline energy use for all municipal buildings is measured and logged.

B. Reducing Transportation Energy Demand, Single Occupancy Vehicle Use, and Encouraging Renewable or Lower-Emission Energy Sources for Transportation

Objective B-1: Encourage increased use of transit as a primary method to complete daily trips and reduce demands on existing infrastructure such as roads and parking.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Identify challenges and opportunities for small-scale transit in Woodbury.	Planning Commission	Medium 1 – 5 Years	Planning Commission will hold at least two meetings to discuss the desires of transit in Woodbury and understand the challenges present.
2	Explore alternative trips that Woodbury may be able to take advantage of beyond the current service from Rural Community Transportation.	Planning Commission, Selectboard, Rural Community Transportation, Green Mountain Transit.	Medium 1 – 5 Years	Planning Commission will work with local transit providers to identify any opportunities for new routes, and work with Selectboard to leverage funding for these services.

Objective B-2: Promote the shift away from single-occupancy vehicle trips to reduce congestion, impacts to local facilities, and support alternative options for transportation needs.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Identify possible locations for a formal park-and-ride lot in Woodbury.	Planning Commission	High 1 – 3 Years	A list of 4 possible existing lots will be created and discussed at a public meeting.
2	I Continue support of, and maintain a town representative on the regional Consolidated Union District (CUD), CV Fiber or other contractor(s) in the deployment of high-speed broadband connectivity.	Planning Commission	Medium 3 – 6 Years	Planning Commission will devote a public meeting to discussing the telecommunication needs of the community and the opportunities to improve access. Representation on CV Fiber CUD board.
3	Promote the Go Vermont webpage on the official Woodbury website.	Website Administrator	High 1 Year	A link to the Go Vermont webpage is added to Woodbury's municipal website.

Objective B-3: Promote the shift away from gas/diesel vehicles to electric or non-fossil fuel transportation options to reduce dependency on non-renewable fuel sources for transportation.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Consider the implementation and possible locations for an EV charging station.	Planning Commission, Selectboard	Medium 1 – 6 Years	Locations for possible EV charging infrastructure are identified and grant opportunities are considered.
2	Partner with Drive Electric Vermont to invite them to community events to showcase electric vehicle options.	Planning Commission	Medium 1 – 6 Years	Woodbury hosts one electric car focused event during the term of this plan.

Objective B-4: Facilitate the development of walking and biking infrastructure to provide alternative transportation options for the community.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Establish bicycle and pedestrian facilities in the Village Centers and connecting to other prominent locations in town (e.g. South Woodbury, town forest, Woodbury Lake)	Planning Commission, Selectboard, Highway Department	Medium 1 – 6 Years	A public hearing is held to discuss the pros and cons of integrating more walking and biking infrastructure and Implementation of related actions as identified in the 2021 town plan.

Objective B-5: Demonstrated municipal leadership with respect to efficiency of municipal transportation to show an on-going commitment on behalf of the Town of Woodbury.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Identify possible municipal properties to take on EV charging stations.	Planning Commission	Medium 1 – 6 Years	At public meeting to discuss EV charging infrastructure, identify a list of municipal properties that may be suitable for EV charging.
2	Continue to inventory municipal vehicles and maintain records for at least seven years, in order to best consider efficiency in the replacement of these vehicles.	Selectboard	High/ Sustained 1 – 2 Years	Inventory of municipal vehicles is maintained.
3	Prioritize efficiency of vehicles when considering the purchase of a new vehicle, and consider the switch to biodiesel for municipal vehicles.	Planning Commission, Selectboard.	High/ Sustained 1 – 8 Years	In decision-making regarding purchase of new vehicles, fuel efficiency and biodiesel use will be considered.

C. Patterns and Densities of Land Use Likely to Result in Conservation of Energy

Objective C-1: The Town of Woodbury is committed to reducing sprawl and minimizing low-density development by encouraging density in areas where infrastructure exists or is planned to support growth.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Revise Zoning bylaws to reflect the Future Land Use plan as contained within the 2021 town plan which may incorporate greater densities in the Village District, South Woodbury, and other neighborhoods planned for development in the Future Land Use map.	Planning Commission, CVRPC	High 1 – 4 Years	Zoning bylaws are revised, adopted, and include changes to density requirements.

Objective C-2: Strongly prioritize development in compact, mixed-use centers when feasible and appropriate and identify ways to make compact development more feasible throughout the Town of Woodbury.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	Apply for a Village Center Designation for Woodbury's villages though the State Designation Program.	Planning Commission, Selectboard, and CVRPC	Medium 1-5 Years	Woodbury receives at least one village center designation in the term of this plan.
2	Inventory buildings and sites in proximity to the village areas , that may be repurposed for multi-unit or elderly housing	Planning Commission, Selectboard.	Medium 1 – 3 Years	A list of possible buildings/properties to be converted into multi-family or other housing options is created.

D. Development and Siting of Renewable Energy Resources

Objective D-1: Evaluate generation from existing renewable energy generation including the identification of constraints, resource areas, and existing infrastructure by energy type.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
2	Hold a survey focusing on current thoughts on where solar is located, and what constraints may be considerable. Revisit and reassess at another interval in the term of this plan.	Planning Commission	High/ Sustained	A survey is distributed to residents and results are tabulated and posted online.

Objective D-2: Evaluate generation from potential renewable energy generation including the identification of constraints, resource areas, and existing infrastructure by energy type.

	Implementation Action	Responsibility	Priority/ Timeline	Measure of Success
1	. Based upon more extensive public input determine if the Town should include more defined an specific parameters to guide the siting of larger scale renewable energy generation facilities.	Planning Commission	High 1 – 2 Years	Unsuitable and preferred areas for renewable energy generation are identified, and the consideration of municipal renewable energy are included in an updated/amended town plan.
2	Hold a public meeting halfway through the plan's duration (4 years from adoption) to assess constraints, and make any changes necessary to adapt to changing conditions in Woodbury.	Planning Commission	Medium 4 Years	A public meeting is held 4 years from adoption of this plan to discuss any changes to preferred or constrained areas.

Mapping

The siting and generation of renewable resources is a critical part to identifying whether the region can meet its share of the state's renewable energy goals by 2050. Furthermore, this analysis is important to determine where resources are available throughout the region to ensure no one municipality is unduly burdened with supporting more than should be reasonably anticipated. Finally, this information will better position the Town of Woodbury to evaluate the renewable energy generation options that are available to meet these goals.

To this end, maps were created for the Town of Woodbury that identifies resources related to solar, wind, hydroelectric, and woody biomass. Maps were also created to identify constraints that may limit the overall area of possible resource development within the town. The following information will address the evaluation of current and future generation potential within the Town of Woodbury.

Existing Renewable Resource Generation

As noted in the Analysis and Targets section, Tables 11 (p. 15) and 13 (p. 18-19) identify the existing renewable generation for the Town of Woodbury. Information on existing generation is a representation of all projects that were issued a Certificate of Public Good by the Public Service Board through 2019. Projects that are currently under review are not included in these numbers therefore additional renewable energy generation may be developed that will not be noted in the total generation represented in Table 11 or 13.

Potential Renewable Energy Generation

Table 12 (p. 18) in the Analysis and Targets section identifies potential generation of renewable energy for Woodbury. This information is based on mapping data provided by the Vermont Center for Geographic Information (VCGI) and the Department of Public Service. This information includes specific data related to prime resource areas for solar and wind development which is an indication of where the conditions are most ideal for generation of the specific resource. Also included with this data is information regarding constraints to be considered when evaluating areas for renewable energy development. Additional detail regarding known and possible constraints is discussed below.

Constraints

As part of this effort, the Central Vermont Regional Planning Commission has identified information for each municipality related to renewable energy generation that includes an analysis and evaluation of resource areas within each municipality and how those resource areas are impacted by statewide and regionally identified constraints. In order to determine the impacts, an understanding of the constraints needs to be discussed.

For the purpose of this plan, constraints are separated into two main categories; known and possible. Known constraints are those areas where development of a renewable resource are

very limited and therefore are not likely to occur. Known constraints that have been identified include:

- Vernal Pools (confirmed or unconfirmed)
- River Corridors as identified by the Vermont Department of Environmental Conservation
- Federal Emergency Management Agency Identified Floodways
- State-significant Natural Communities and Rare, Threatened, and Endangered Species
- National Wilderness Areas
- Class 1 and Class 2 Wetlands (as noted in the Vermont State Wetlands Inventory or Advisory Layers)
- Regionally or Locally Identified Critical Resources

Similarly, the state has identified a list of possible constraints to be considered. Possible constraints identify areas where additional analysis will need to occur in order to determine if development of renewable energy resources is appropriate. In some cases, conditions may be prohibitive, but in others the conditions may be suitable for renewable energy development. The possible constraints include:

- Agricultural Soils
- Federal Emergency Management Agency Special Flood Hazard Areas
- Protected Lands (State fee lands and private conservation lands)
- Act 250 Agricultural Soil Mitigation Areas
- Deer Wintering Areas
- Vermont Agency of Natural Resources Conservation Design Highest Priority Forest Blocks
- Hydric Soils
- Regionally or Locally Identified Resources

In addition to the items listed above, the Regional Planning Commission, through its Regional Energy Committee, has identified additional constraints to be included for all the municipalities that were noted as being regionally significant. For the purposes of this mapping exercise, all the regional constraints are considered possible constraints. This is because the Regional Energy Committee determined that, like the statewide possible constraints, conditions could be such that developing renewable energy resources in these locations could occur but should be studied further at the municipal level to determine if the specific conditions regarding these locations are suitable. The possible regional constraints that were identified include:

- Elevations above 2,500 feet
- Slopes greater than 25%
- Municipally Owned Lands
- Lakeshore Protection Buffer Areas of 250 feet

Methodology

With all the known and possible constraints identified, this information was overlaid on the resources maps for solar and wind resources. Where known constraints existed the resource areas were deleted. Where possible constraints existed, the resource areas were shaded. The resulting areas included those lands where prime resources exist without any constraints and prime resource areas with possible constraints. The total area within these two categories served as the basis to determine the amount of resource that is available for potential development within the Town of Woodbury.

As noted in Table 12 of the Analysis and Targets section, based on the solar, wind, and hydroelectric potential within Woodbury, approximately 4,155,059 megawatt hours of energy could be produced, well above the town's allocation of 7,999 megawatt hours by 2050 as noted in Table 7. The potential energy generation for the Town of Woodbury increases when other sources of renewable energy generation such as biomass, biogas, and methane are included. No specific generation numbers are listed in Table 12 for these types of energy generation as their siting is not specifically tied to the availability of a resource, therefore calculating a potential for generation would be difficult.

Transmission Infrastructure

In addition to identifying and calculating possible generation of renewable energy based on resources and constraints, the mapping included in this plan also incorporates the existing three phase power infrastructure throughout the municipality. This is important to include because renewable energy generation needs three phase power to provide energy generation back to the grid. Without three phase power, renewable energy generation would be limited to scales necessary to serve uses in close proximity that would not require transmission infrastructure.

Like limits on three phase power are potential limitations on existing transmission infrastructure and the ability to transmit energy from its point of generation to the possible users. As noted previously, the mapping includes three phase power, but it also includes information on current transmission infrastructure. This is another component to consider when identifying where specific generation types should be located to ensure the transmission capacity exists within the grid or to identify areas where upgrades may be needed before development of renewable energy generation can occur. Based on the factors noted above, it may be appropriate for mapping to identify areas where significant energy loads are currently occurring or anticipated based on future land use and zoning.

Preferred & Unsuitable Siting Locations

The Town of Woodbury recognizes the preferred locations that have been identified by the State of Vermont's Net Metering Rules. Additional preferred locations may be identified after

an analysis of the needs with the community have been conducted. The state preferred locations include but are not limited to:

- Parking lots
- Gravel pits
- Brownfield sites
- Landfills
- Rooftop installations

As seen on the attached map, Woodbury has a few quarry sites and a gravel pit that may be suitable for a State Preferred Site. Parking lots are not shown on the map. As of drafting this plan in 2019, there are no mapped brownfield sites or landfills in Woodbury.

Local Mapping

To provide a more specific visual representation of resources and constraints, mapping was developed by the Central Vermont Regional Planning Commission that includes:

- Solar Resource Areas
- Wind Resource Areas
- Hydroelectric Resource Areas
- Known Constraints
- Possible Constraints
- Woody Biomass Resource Area
- Existing Renewable Generation Sites
- Statewide Preferred Generation Sites

These maps should be used as a starting point to determine what areas may exhibit characteristics consistent with conditions that would support renewable energy development. More detailed review and analysis should be conducted to determine specific boundaries for resource areas or constraints. These maps can be found in Appendix B.

APPENDIX A

KNOWN & POSSIBLE CONSTRAINT DEFINITIONS AND DESCRIPTIONS

The following is a list of the known, possible, and regional constraints that were used and referenced in the mapping section of this document. A definition of the constraint including source of the data is provided.

Known Constraints

Vernal Pools (confirmed and unconfirmed layers)
Source: Vermont Fish and Wildlife, 2009- present

Vernal pools are temporary pools of water that provide habitat for distinctive plants and animals. Data was collected remotely using color infrared aerial photo interpretation. "Potential" vernal pools were mapped and available for the purpose of confirming whether vernal pool habitat was present through site visits. This layer represents both those sites which have not yet been field-visited or verified as vernal pools, and those that have.

Department of Environmental Conservation (DEC) River Corridors -
Source: DEC Watershed Management District Rivers Program, January 2015

River corridors are delineated to provide for the least erosive meandering and floodplain geometry toward which a river will evolve over time. River corridor maps guide State actions to protect, restore and maintain naturally stable meanders and riparian areas to minimize erosion hazards. Land within and immediately abutting a river corridor may be at higher risk to fluvial erosion during floods.

River corridors encompass an area around and adjacent to the present channel where fluvial erosion, channel evolution and down-valley meander migration are most likely to occur. River corridor widths are calculated to represent the narrowest band of valley bottom and riparian land necessary to accommodate the least erosive channel and floodplain geometry that would be created and maintained naturally within a given valley setting.

Federal Emergency Management Agency (FEMA) Floodways-
Source: FEMA Floodway included in Zones AE- FEMA Map Service Center

These are areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. A "Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

State-significant Natural Communities and Rare, Threatened, and Endangered Species-
Source: Vermont Fish and Wildlife, National Heritage Inventory

The Vermont Fish and Wildlife Department's Natural Heritage Inventory (NHI) maintains a database of rare, threatened and endangered species and natural (plant) communities in Vermont. The Element Occurrence (EO) records that form the core of the Natural Heritage Inventory database include information on the location, status, characteristics, numbers, condition, and distribution of elements of biological diversity using established Natural Heritage Methodology developed by NatureServe and The Nature Conservancy.

An Element Occurrence (EO) is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. For species Elements, the EO often corresponds with the local population, but when appropriate may be a portion of a population or a group of nearby populations (e.g., metapopulation).

National Wilderness Areas-
Source: United States Department of Agriculture Forest Service

A parcel of Forest Service land congressionally designated as wilderness.

Class 1 and Class 2 Wetlands-
Source: Vermont Significant Wetland Inventory (VSWI) and advisory layers

The State of Vermont protects wetlands which provide significant functions and values and protects a buffer zone directly adjacent to significant wetlands. Wetlands in Vermont are classified as Class I, II, or III based on the significance of the functions and values they provide. Class I and Class II wetlands provide significant functions and values and are protected by the Vermont Wetland Rules. Any activity within a Class I or II wetland or buffer zone which is not exempt or considered an "allowed use" under the Vermont Wetland Rules requires a permit.

Class I wetlands have been determined to be, based on their functions and values, exceptional or irreplaceable in its contribution to Vermont's natural heritage and, therefore, merits the highest level of protection. All wetlands contiguous to wetlands shown on the VSWI maps are presumed to be Class II wetlands, unless identified as Class I or III wetlands, or unless determined otherwise by the Secretary or Panel pursuant to Section 8 of the Vermont Wetland Rules.

Possible Constraints

Agricultural Soils -
Source: Natural Resources Conservation Service (NRCS)

Primary agricultural soils" are defined as "soil map units with the best combination of physical and chemical characteristics that have a potential for growing food, feed, and forage crops,

have sufficient moisture and drainage, plant nutrients or responsiveness to fertilizers, few limitations for cultivation or limitations which may be easily overcome, and an average slope that does not exceed 15 percent. Present uses may be cropland, pasture, regenerating forests, forestland, or other agricultural or silvicultural uses.

The soils must be of a size and location, relative to adjoining land uses, so that those soils will be capable, following removal of any identified limitations, of supporting or contributing to an economic or commercial agricultural operation. Unless contradicted by the qualifications stated above, primary agricultural soils include important farmland soils map units with a rating of prime, statewide, or local importance as defined by the Natural Resources Conservation Service of the United States Department of Agriculture.

FEMA Special Flood Hazard Areas -

The land area covered by the floodwaters of the base flood is the Special Flood Hazard Area (SFHA) on NFIP maps. The SFHA is the area where the National Flood Insurance Program's (NFIP's) floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

Protected Lands -

Include State fee land and private conservation lands. Other state level, non-profit and regional entities also contribute to this dataset. The Vermont Protected Lands Database is based on an updated version of the original Protected Lands Coding Scheme reflecting decisions made by the Protected Lands Database Work Group to plan for a sustainable update process for this important geospatial data layer.

Act 250 Ag Mitigation Parcels -
Source: Vermont Department of Agriculture

All projects reducing the potential of primary agricultural soils on a project tract are required to provide "suitable mitigation," either "onsite or offsite," which is dependent on the location of the project. This constraint layer includes all parcels in the Act 250 Ag Mitigation Program as of 2006.

Deer Wintering Areas (DWA)-
Source: Vermont Department of Fish and Wildlife

Deer winter habitat is critical to the long-term survival of white-tailed deer (Odocoileus virginianus) in Vermont. Being near the northern extreme of the white-tailed deer's range, functional winter habitats are essential to maintain stable populations of deer in many years when and where yarding conditions occur. Consequently, deer wintering areas are considered under Act 250 and other local, state, and federal regulations that require the protection of important wildlife habitats. DWAs are generally characterized by rather dense softwood (conifer) cover, such as hemlock, balsam fir, red spruce, or white pine. Occasionally DWAs are

found in mixed forest with a strong softwood component or even on found west facing hardwood slopes in conjunction with softwood cover. The DWA were mapped on mylar overlays on topographic maps and based on small scale aerial photos.

Vermont Conservation Design include the following Highest Priority Forest Blocks: Connectivity, Interior, and Physical Landscape Diversity -
Source: Vermont Department of Fish and Wildlife

The lands and waters identified in this constraint are the areas of the state that are of highest priority for maintaining ecological integrity. Together, these lands comprise a connected landscape of large and intact forested habitat, healthy aquatic and riparian systems, and a full range of physical features (bedrock, soils, elevation, slope, and aspect) on which plant and animal natural communities depend.

Hydric Soils -
Source: Natural Resources Conservation Service

A hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. This constraint layer includes soils that have hydric named components in the map unit.

Regional Constraints

Elevations above 2500 feet-

This constraint uses USGS contours over 2500 feet.

Lake Shore Protection Buffers (250 Foot and 800 Foot in Calais Only)-

For this constraint, CVRPC selected Vermont Hydrologic Dataset lakes and ponds greater than 10 acres and then buffered those by 250 feet and use the Town of Calais Land Use Regulations for shore lands in Calais.

Slopes Greater Than 25%-

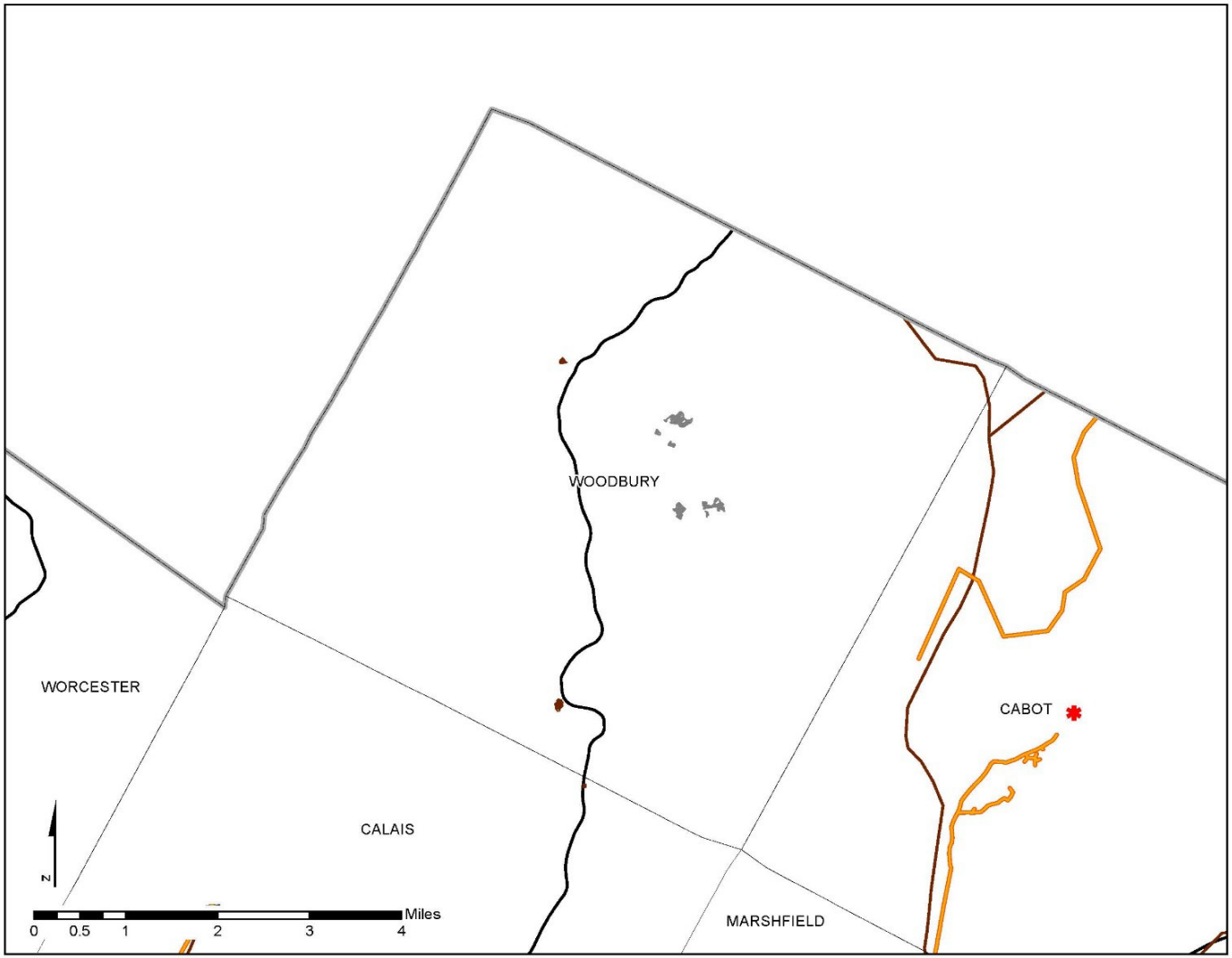
For this constraint, CVRPC performed a slope analysis using a 10-meter Digital Elevation Model.

Municipal Lands -

For this constraint, CVRPC used the Vermont Center for Geographic Information's Protected Lands Database.

Local Constraints

APPENDIX B MUNICIPAL RESOURCE MAPS



Central Vermont
Regional Planning Commission
Preferred Sites

WOODBURY

Key

- Brownfields Sites
- Moretown Landfill
- Sand and Gravel Pits
- Quarries
- Substations
- 3 Phase Power Lines
- Transmision Lines
- Major Roads

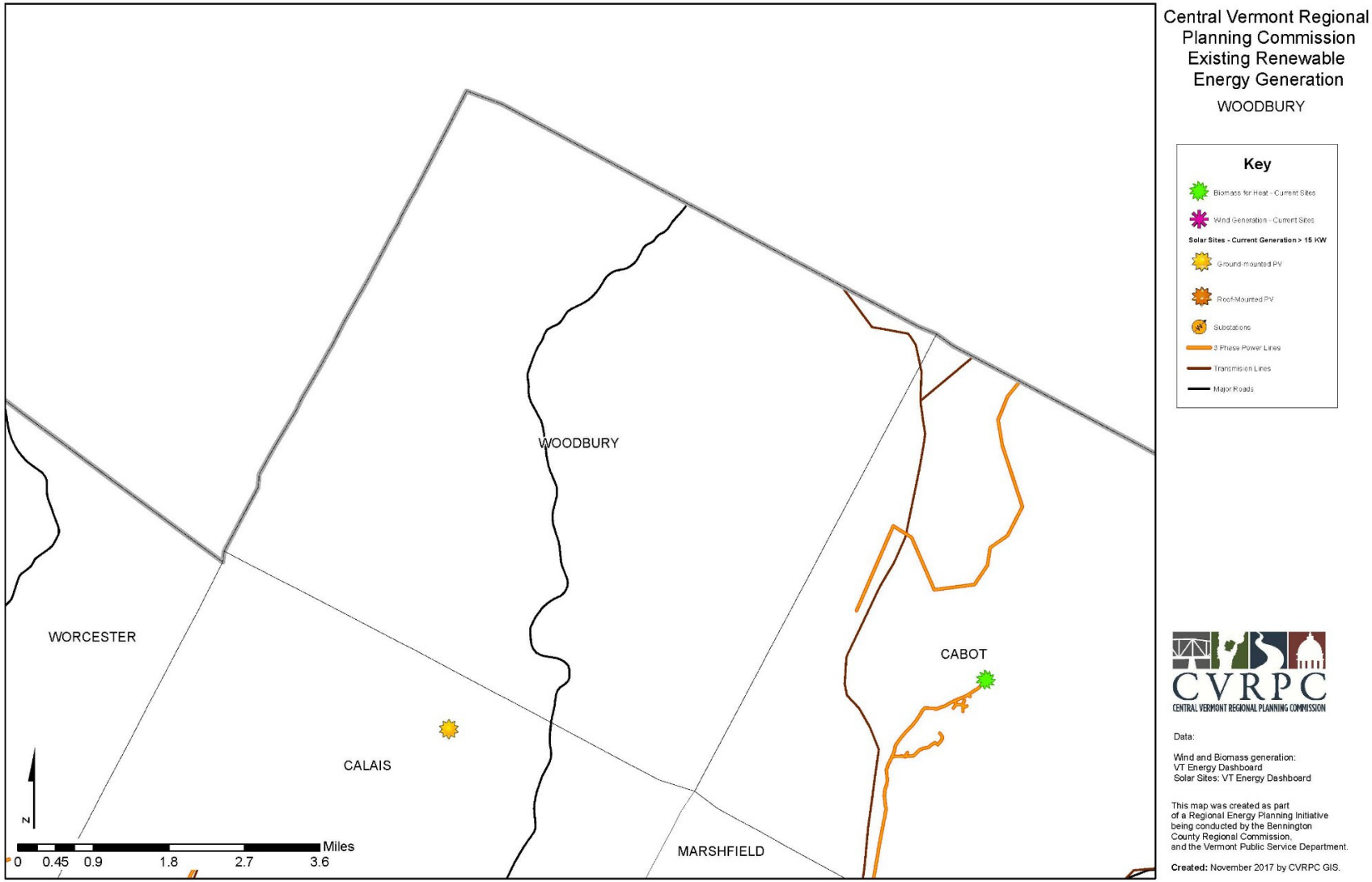
CVRPC
CENTRAL VERMONT REGIONAL PLANNING COMMISSION

Data:

Brownfields: VT ANR, VCGI.
Sand and Gravel Pits, Quarries:
CVRPC, 2013 disgitized from 1998 imagery.

This map was created as part of a Regional Energy Planning Initiative being conducted by the Bennington County Regional Commission, and the Vermont Public Service Department.

Created: November 2017 by CVRPC GIS.



Central Vermont Regional Planning Commission
Existing Renewable Energy Generation
WOODBURY

Key

- Biomass for Heat - Current Sites
- Wind Generation - Current Sites

Solar Sites - Current Generation > 15 KW

- Ground-mounted PV
- Roof-Mounted PV
- Substations
- 3 Phase Power Lines
- Transmission Lines
- Major Roads

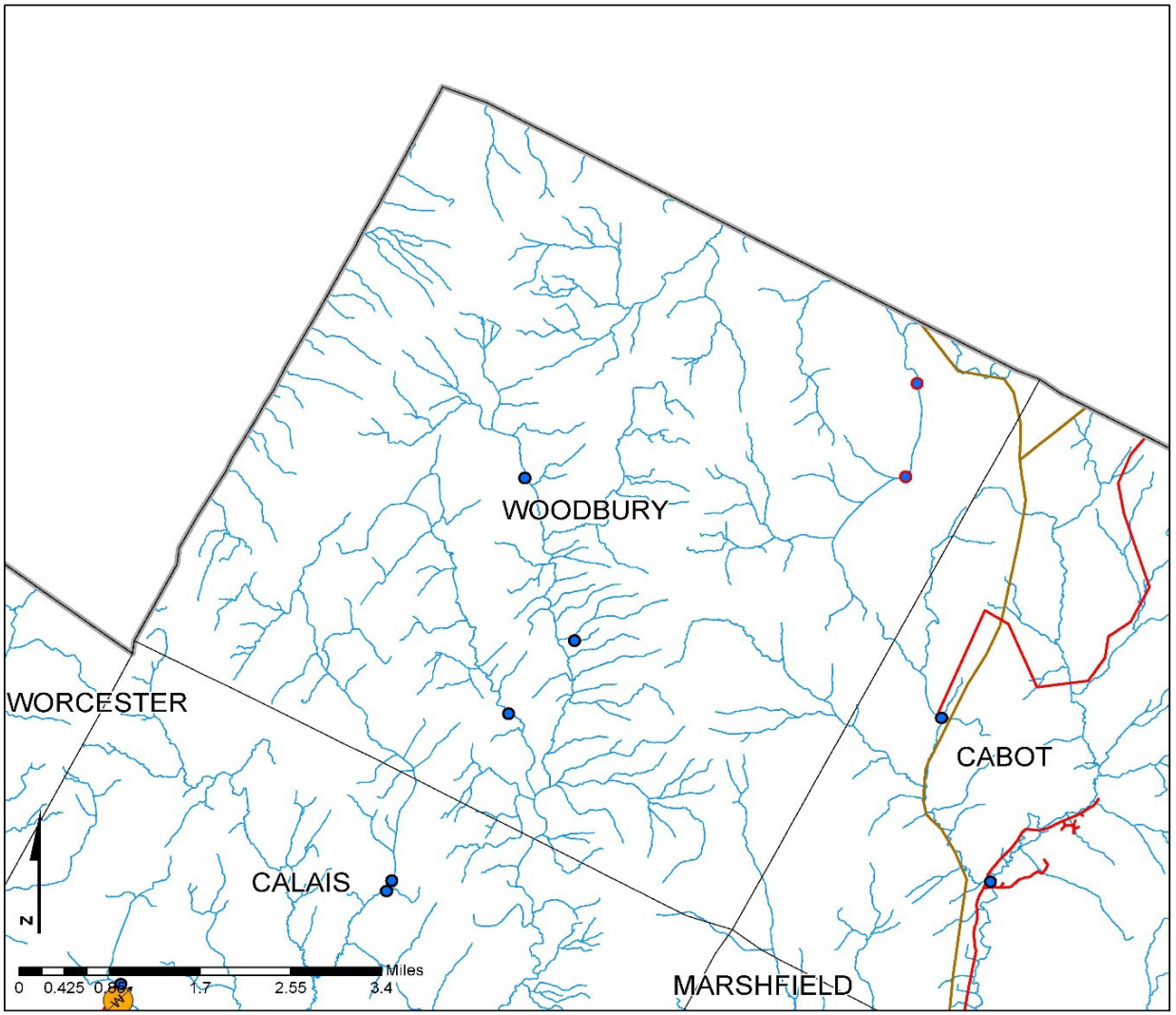
CVRPC
CENTRAL VERMONT REGIONAL PLANNING COMMISSION

Data:

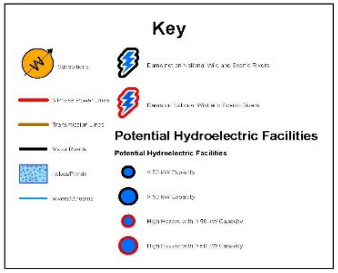
Wind and Biomass generation:
VT Energy Dashboard
Solar Sites: VT Energy Dashboard

This map was created as part of a Regional Energy Planning Initiative being conducted by the Bennington County Regional Commission, and the Vermont Public Service Department.

Created: November 2017 by CVRPC GIS.



WOODBURY
Hydroelectric Resources Map



Methodology

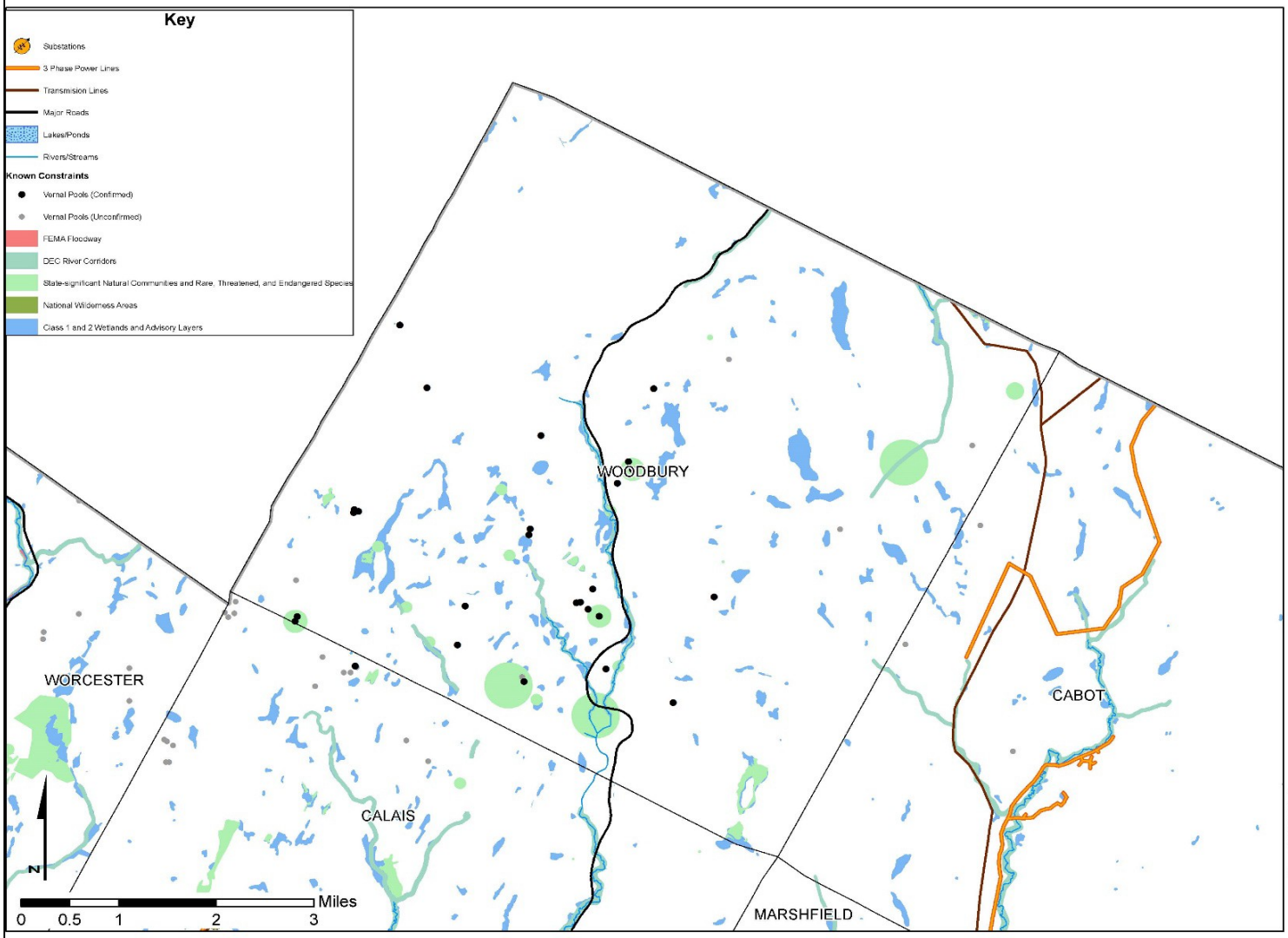
This map shows areas of resource potential for renewable energy generation from hydroelectric , i.e., dams that could be converted in to hydroelectric facilities as well as active hydroelectric sites. Existing hydroelectric dam information was extracted from the Vermont Dam Inventory, while potential hydroelectric sites were derived from a study conducted by Community Hydro in 2007.1 Based on estimates conducted within the report, this map categorizes dams based on their potential hydroelectric generation capacity, and the downstream hazard risk that would be involved in hydroelectric production at each site.

High hazard potential dams are those where failure or mis-operation will probably cause loss of human life. The other rankings were grouped together and their failure or mis-operation results in no probable loss of human life, but could cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. These dams are often located in predominately rural or agricultural areas, but could be located in areas withpopulation and significant infrastructure.

This map was created as part of a Regional Energy Planning Initiative being conducted by the Bennington County Regional Commission, and the Vermont Public Service Department.

Created: December 2016 by CVRPC GIS.
N:\Region\Projects\2017\Act174_Energy\
Hydroelectric Resources 11x17.mxd

CVRPC
CENTRAL VERMONT REGIONAL PLANNING COMMISSION



WOODBURY
Known Constraints Map

Known Constraints

These constraints signal likely, though not absolute, unsuitability for development based on statewide or local regulation or designated critical resources.

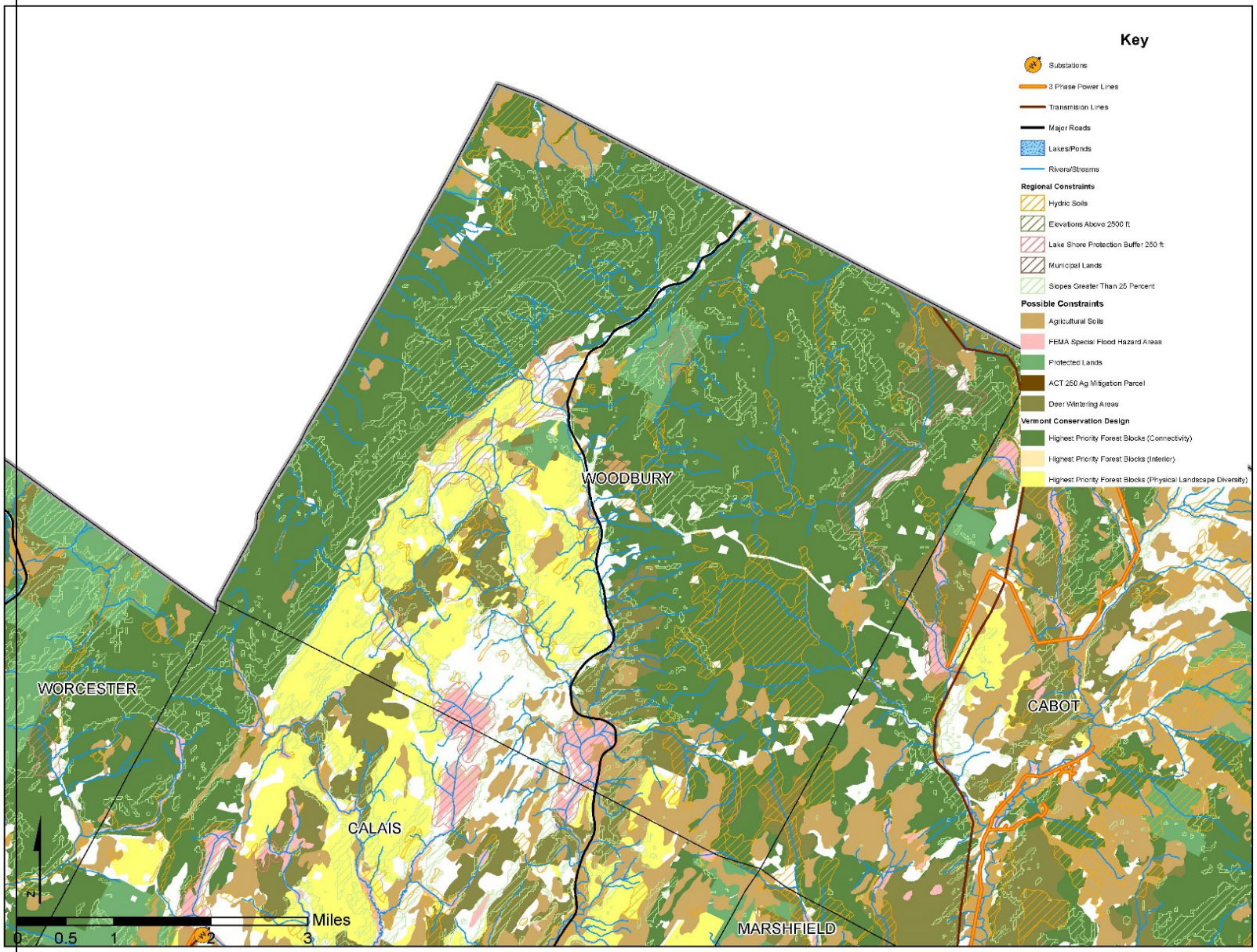
Link to Data -
http://vcgi.vermont.gov/opendata/act174

Known Constraints
Vernal Pools incuding confirmed and unconfirmed - Vermont Fish and Wildlife
DEC River Corridors - DEC WSMD Rivers Program 1/2/15
FEMA Floodway included in Zones AE - FEMA Map Service Center
State-significant Natural Communities and Rare, Threatened, and Endangered Species - Vermont Fish and Wildlife, Natural Heritage Inventory
National Wilderness Areas - USDA Forest Service
Class 1 and Class 2 Wetlands (VSWI) and Advisory Layers - VT Watershed Management Division

This map was created as part of a Regional Energy Planning Initiative being conducted by the Bennington County Regional Commission, and the Vermont Public Service Department.

Created: December 2016 by CVRPC GIS.

CVRPC



WOODBURY
Possible Constraints Map

Possible Constraints

These constraints signals conditions that would likely require mitigation, and which may prove a site unsuitable after site-specific study, based on statewide or regional/ local policies that are currently adopted or in effect.

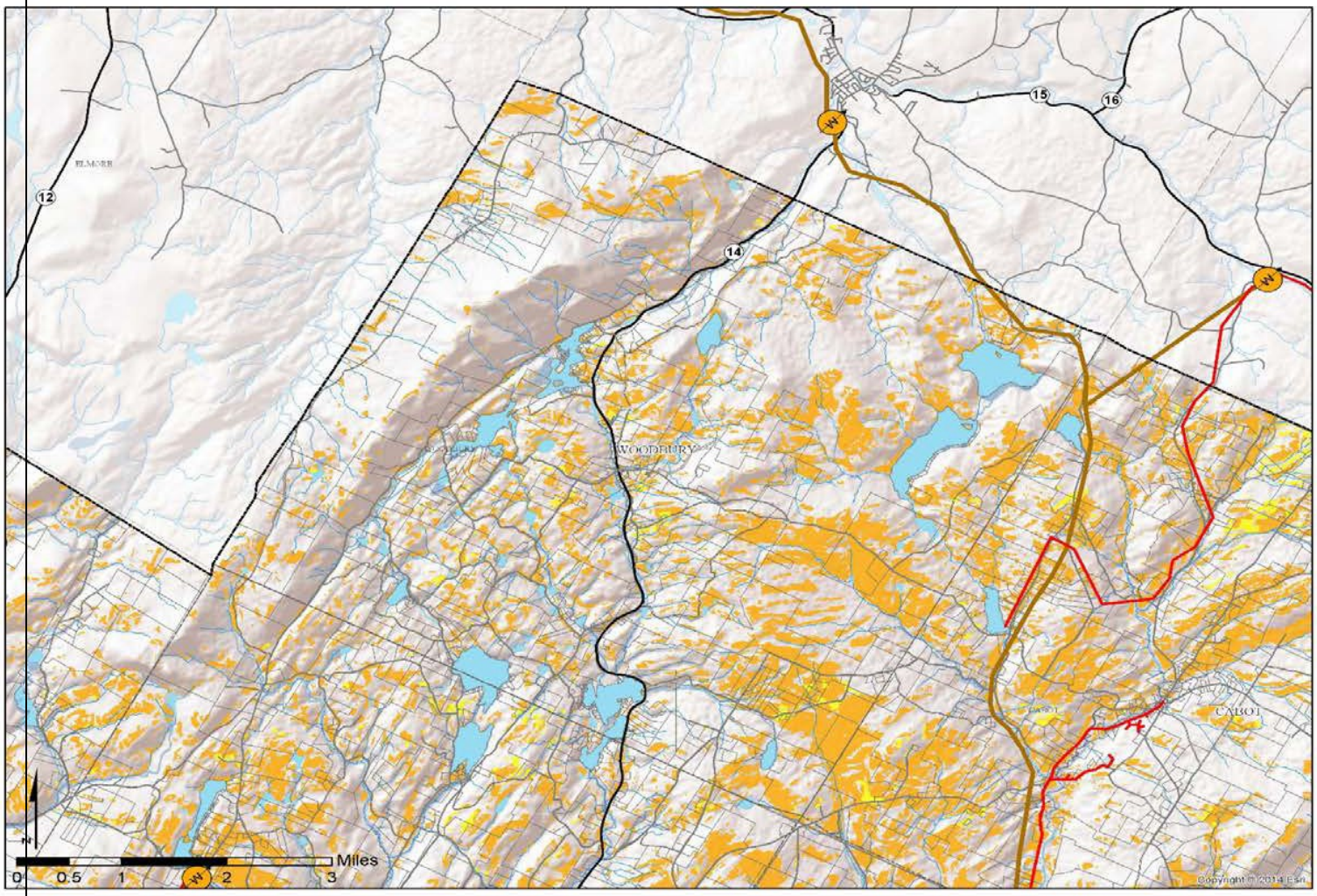
Link to Data - http://vcgi.vermont.gov /opendata/act174

Possible Constraints Data Sources
Agricultural Soils include local, prime and statewide classifications - NRCS
FEMA Special Flood Hazard Areas include Zones A and AE - FEMA Map Service Center
Protected Lands - Include State fee lands and private conservation lands - VCGI
Act 250 Ag Mitigation Parcels include parcel as of 2006 - VT Dept. of Ag
Deer Wintering Areas - VT Fish and Wildlife
Vermont Conservation Design include the following Highest Priority Forest Blocks: Connectivity, Interior, and Physical Landscape Diversity) - VT Fish and Wildlife
Hydric Soils include soils that have hydric named components in the map unit - NRCS

This map was created as part of a Regional Energy Planning Initiative being conducted by the Bennington County Regional Commission, and the Vermont Public Service Department.

Created: December 2016 by CVRPC GIS.

CVRPC


WOODBURY
Solar Resources Map
Legend
Substations
3 Phase Power Lines
Distribution Lines
Solar Potential
Prime (No Constraint)
Secondary (Possible Constraint)
Parcels
Roads
Interstate
US Highway
Vermont State Highway
Town Class 1-3
Known Constraints
Areas not shown on map
Vernal Pools
River Corridors
FEMA Floodways
Natural Communities & Rare, Threatened and Endangered Species
National Wilderness Areas
Wetlands Class 1 and 2
Possible Constraints
VT Agriculturally Important Soils
FEMA Special Flood Hazard Areas
Protected Lands
Act 250 Agricultural Soil Mitigation Areas
Deer Wintering Areas
Highest Priority Forest Blocks
Hydric Soils
Elevations Above 2500Ft
Lake Shore Protection Buffer 250 Ft
Municipal Lands
Slopes Greater Than 25 Percent
Created by: CVRPC GIS 4/4/2017
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Act174_Energy\Solar Resources 11X17
Data is only as accurate as the original source materials.
This map is for planning purposes.
This map may contain errors and omissions
CVRPC
Miles
0 0.5 1 2 3
WOODBURY
CABOT
ELMORE
12
14
15
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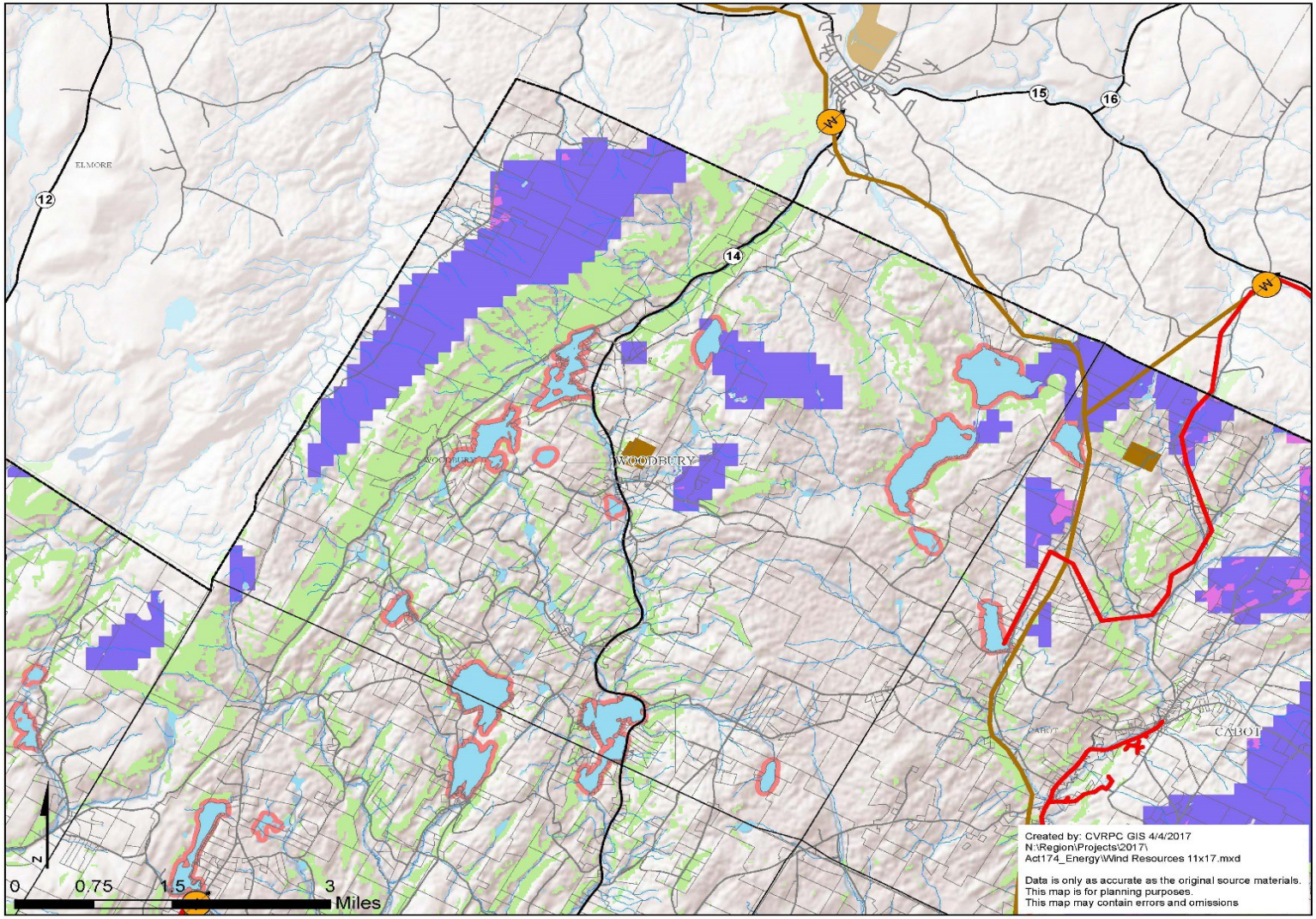
W


WOODBURY
Wind Resources Map
Legend
Substations
3 Phase Power Lines
Transmission Lines
Wind Potential
Prime Wind (No Constraint)
Hub Height (m)
50 70
Secondary Wind (Possible Constraint)
Hub Height (m)
50 70
Parcels
Roads
Interstate
US Highway
Vermont State Highway
Town Class 1-3
Regional Constraints
Elevations Above 2500 ft
Lake Shore Protection Buffer 250 ft
Municipal Lands
Slopes Greater Than 25 Percent
Known Constraints
Areas not shown on map
Vernal Pools
River Corridors
FEMA Floodways
Natural Communities & Rare, Threatened and Endangered Species
National Wilderness Areas
Wetlands Class 1 and 2
Possible Constraints
VT Agriculturally Important Soils
FEMA Special Flood Hazard Areas
Protected Lands
Act 250 Agricultural Soil Mitigation Areas
Deer Wintering Areas
Highest Priority Forest Blocks
Hydric Soils
ELMORE
WOODBURY
CABOT
12
14
15
16
N
0 0.75 1.5 3 Miles
Created by: CVRPC GIS 4/4/2017
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Act174_Energy\Wind Resources 11x17.mxd
Data is only as accurate as the original source materials.
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CVRPC
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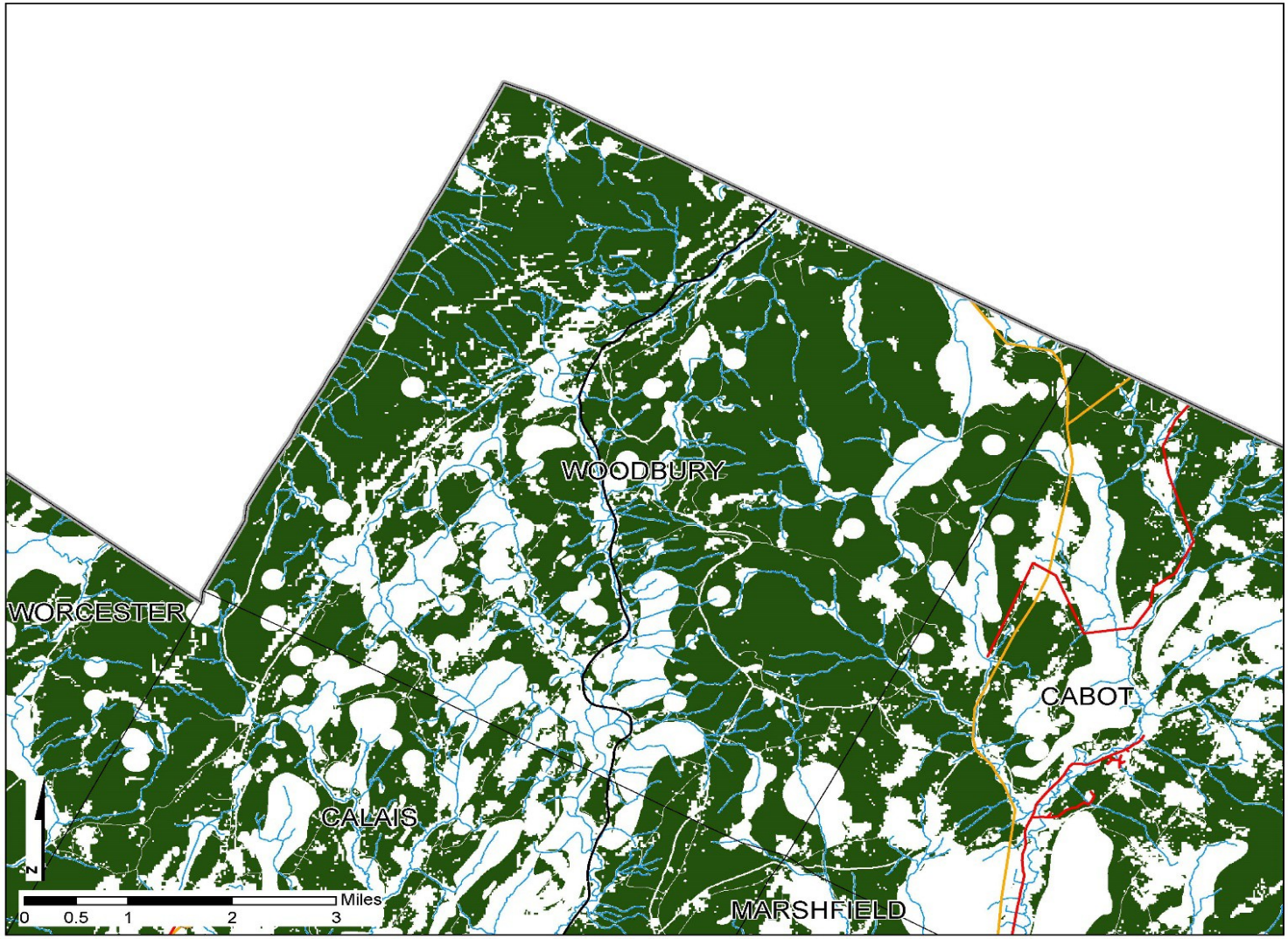

WOODBURY
Woody Biomass Resources Map

Key

- Substations
- 3 Phase Power Lines
- Transmission Lines
- Major Roads
- Lakes/Ponds
- Rivers/Streams
- Woody Biomass

Methodology

This map shows areas of resource potential for woody biomass, i.e., locations where forested areas are. This map also considers various other conditions, such as ecological zones, that may impact the feasibility of renewable energy/alternative heating source. These conditions are referred to as constraints. This map does not include areas where other types of biomass, such as biomass from agricultural residue, could be grown/harvested.

This map was created as part of a Regional Energy Planning Initiative being conducted by the Bennington County Regional Commission, and the Vermont Public Service Department.

Created: December 2016 by CVRPC GIS.

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